


Search Notes 	Application/Control No. 13626057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON
	Examiner SHAUN R HURLEY	Art Unit 3765

CPC- SEARCHED		
Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
289	2, 16.5, 17, 18.1	11/14/13	SRH
D21	334		
273	281, 288, 309		
66	4		
Updated	the previous	07/30/14	SRH

SEARCH NOTES		
Search Notes	Date	Examiner
See Search History	11/14/13	SRH
Updated the previous	07/30/14	SRH

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
EAST	Claim Search	07/30/14	SRH

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Receipt date: 07/18/2014

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Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit	3765		
	Examiner Name	Hurley, Shaun R.		
	Attorney Docket Number	67467-009 PUS1		

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/SRH/	1	0426087		1890-04-22	Wolkow	
/SRH/	2	0968199		1910-08-23	Schwartz	
/SRH/	3	1020963		1912-03-26	Cake	
/SRH/	4	1176482		1916-03-21	Orme	
/SRH/	5	1279411		1918-09-17	Neuman	
/SRH/	6	1405744		1922-02-07	Sampliner	
/SRH/	7	1694849		1928-12-11	Fujii	
/SRH/	8	1705860		1929-03-19	Hagihara	

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/SRH/	9	1718140		1929-06-18	Hagihara	
/SRH/	10	2072668		1937-03-02	Eltgroth	
/SRH/	11	2433307		1947-12-23	Thomas	
/SRH/	12	2450067		1948-09-28	Wolff	
/SRH/	13	2666249		1954-01-19	Ruiz et al.	
/SRH/	14	2707052		1955-04-26	Brown	
/SRH/	15	2726434		1955-12-13	Knoblock et al.	
/SRH/	16	2984488		1961-05-16	Kirchner	
/SRH/	17	3112491		1963-12-03	Cleveland	
/SRH/	18	3476426		1969-11-04	Lewin	
/SRH/	19	3758923		1973-09-18	Maude	

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/SRH/	20	3853021		1974-12-10	Hayes	
/SRH/	21	3905133		1975-09-16	Charman	
/SRH/	22	4023245		1977-05-17	Zaltzman	
/SRH/	23	4131138		1978-12-26	Boisvert	
/SRH/	24	4248063		1981-02-03	Wang	
/SRH/	25	4729229		1988-03-08	Whicker	
/SRH/	26	5331725		1994-07-26	Chou	
/SRH/	27	5888392		1999-03-30	Frizell	
/SRH/	28	6131778		2000-10-17	Etzion	
/SRH/	29	6149436		2000-11-21	Dunn	
/SRH/	30	D248347		1978-07-04	McCollum	

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/SRH/	31	D389050		1998-01-13	Li	
/SRH/	32	D425784		2000-05-30	Beugelsdyk et al.	
/SRH/	33	D426425		2000-06-13	Hermanski	
/SRH/	34	D478738		2003-08-26	Workman	
/SRH/	35	D552463		2007-10-09	French et al.	
/SRH/	36	D578383		2008-10-14	Adams	
/SRH/	37	D608189		2010-01-19	Jackson et al.	
/SRH/	38	D690191		2013-09-24	Takakuwa et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/SRH/	1	20070114340		2007-05-24	Adams	

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/SRH/	1	How to Make Rubber Band Bracelets Using Twistz Bandz - Instruction #1; http://www.youtube.com/watch?v=6nlnnVEjrLU ; March 28, 2011		<input type="checkbox"/>
/SRH/	2	Various rubber band crafts and bracelets using Rainbow Loom®; http://www.youtube.com/watch?v=oM6sOkZFz5o ; March 30, 2011		<input type="checkbox"/>
/SRH/	3	How to make "Diamond" pattern rubber band bracelet using the Rainbow Loom® Kit; http://www.youtube.com/watch?v=dZa8dpZasKA ; June 8, 2011		<input type="checkbox"/>
/SRH/	4	(Rainbow Loom®) Twistz Bandz product - with bloopers; http://www.youtube.com/watch?v=DbzS5u8ib_0 ; July 6, 2011		<input type="checkbox"/>
/SRH/	5	Defendants' Preliminary Non-Binding Invalidity Contentions, Choon's Design LLC v. Zenacon, LLC et al., United States District Court for the Eastern District of Michigan, Case No. 2:13-cv-13568-PJD-RSW, March 7, 2014.		<input type="checkbox"/>
/SRH/	6	Decision to Institute of Inter Partes Review of US Patent No. 8485565 dated May 20, 2014, Case IPR2014-00218, from the United States Patent and Trademark Office.		<input type="checkbox"/>
/SRH/	7	Petitioner's Request for Rehearing Under 37 CFR §42.71(d) filed on June 3, 2014, Case IPR2014-00218, from the United States Patent and Trademark Office.		<input type="checkbox"/>

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	Attorney Docket Number	67467-009 PUS1	

/SRH/	8	United States Continuation Patent Application No. 13/938,717 filed on July 10, 2013, entitled "BRUNNIAN LINK MAKING DEVICE AND KIT" Attorney Docket No. 67467-001 PUS2	<input type="checkbox"/>
/SRH/	9	United States Continuation Patent Application No. 14/329,099 filed on July 11, 2014, entitled "BRUNNIAN LINK MAKING DEVICE AND KIT" Attorney Docket No. 67467-001 PUS4	<input type="checkbox"/>
/SRH/	10	United States Patent Application No. 14/331,456 filed on July 15, 2014, entitled "HAND HELD LINK MAKING DEVICE AND KIT" Attorney Docket No. 67467-009 PUS3	<input type="checkbox"/>
/SRH/	11	United States Patent Application No. 14/270,635 filed May 6, 2014, entitled "DEVICE FOR FORMING BRUNNIAN LINKS" Attorney Docket No. 67467-011 PUS1	<input type="checkbox"/>
/SRH/	12	United States Design Patent Application No. 29/468891 filed October 24, 2013, entitled "BRUNNIAN LINK FORMING LOOM" Attorney Docket No. 67467-011 DUS1	<input type="checkbox"/>
/SRH/	13	United States Patent Application No. 14/226,096 filed on March 26, 2014, entitled "MONSTER TAIL LOOM FOR FORMING BRUNNIAN LINKS" Attorney Docket No. 67467-012 PUS1	<input type="checkbox"/>
/SRH/	14	United States Design Patent Application No. 29/468,549 filed on October 1, 2013, entitled "BRUNNIAN LINK FORMING LOOM" Attorney Docket No. 67467-012 DUS1	<input type="checkbox"/>


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EXAMINER SIGNATURE

Examiner Signature	/Shaun Hurley/	Date Considered	07/30/2014
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Index of Claims 	Application/Control No. 13626057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON
	Examiner SHAUN R HURLEY	Art Unit 3765

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	11/14/2013	07/30/2014						
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	3	✓	=						
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	25		=						
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EAST Search History

EAST Search History (Prior Art)

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S5	31	d21/334.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:03
S6	0	"273,281,288,309".ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:09
S7	1357	273/281,288,309.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:09
S8	212	S7 and (pin or peg)	US-PGPUB; USPAT	OR	ON	2013/04/19 14:10
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S16	593	link same band same elastic	US-PGPUB; USPAT	OR	ON	2013/04/19 14:43
S17	333	link same (band near2 elastic)	US-PGPUB; USPAT	OR	ON	2013/04/19 14:44
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S55	125	S53 S54	US-PGPUB; USPAT	OR	ON	2014/07/29 10:55
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S57	13	S56 and knit\$4	US-PGPUB; USPAT	OR	ON	2014/07/29 11:05
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S59	0	c-clip and bracelet	USOCR	OR	ON	2014/07/29 11:10
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S61	73	c-clip and braid\$3	US-PGPUB; USPAT	OR	ON	2014/07/29 11:25
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EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	661	(device and pin and groove and access).dcm.	US-PGPUB; USPAT; UPAD	OR	ON	2014/07/30 20:30
L2	47	(links and device and pin and	US-PGPUB;	OR	ON	2014/07/30

EAST Search History

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7/ 30/ 2014 8:31:33 PM

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CONFIRMATION NO. 7803

SERIAL NUMBER 13/626,057	FILING or 371(c) DATE 09/25/2012 RULE	CLASS 289	GROUP ART UNIT 3765	ATTORNEY DOCKET NO. 67467-009 PUS1		
APPLICANTS						
INVENTORS Cheong Choon Ng, Novi, MI;						
** CONTINUING DATA ***** This application is a CIP of 13/227,638 09/08/2011 PAT 8485565 which claims benefit of 61/410,399 11/05/2010						
** FOREIGN APPLICATIONS *****						
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 10/12/2012						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Met after Allowance Initials	STATE OR COUNTRY MI	SHEETS DRAWINGS 6	TOTAL CLAIMS 24 16	INDEPENDENT CLAIMS 4 3
ADDRESS CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009 UNITED STATES						
TITLE BRUNNIAN LINK MAKING DEVICE AND KIT						
FILING FEE RECEIVED 1070	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit			

Receipt date: 03/20/2014

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Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit	3765		
	Examiner Name	Hurley, Shaun R.		
	Attorney Docket Number	67467-009 PUS1		

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/SRH/	1	5426788		1995-06-27	Meltzer	
/SRH/	2	7040120		2006-05-09	Hunter	
/SRH/	3	8418434		2013-04-16	Carruth et al.	
/SRH/	4	D592537		2009-05-19	Darnell	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit	3765		
	Examiner Name	Hurley, Shaun R.		
	Attorney Docket Number	67467-009 PUS1		

/SRH/	1	2147918	GB		1985-05-22	University of Technology (United Kingdom)	<input type="checkbox"/>
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/SRH/	1	Petition for Inter Partes Review of U.S. Patent No. 8,485,565 and Exhibits, filed in the United States Patent and Trademark Office	<input type="checkbox"/>

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Examiner Signature	/Shaun Hurley/	Date Considered	07/30/2014
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PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit	3765		
	Examiner Name	Hurley, Shaun R.		
	Attorney Docket Number	67467-009 PUS1		

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12	United States Design Patent Application No. 29/468891 filed October 24, 2013, entitled "BRUNNIAN LINK FORMING LOOM" Attorney Docket No. 67467-011 DUS1	<input type="checkbox"/>
13	United States Patent Application No. 14/226,096 filed on March 26, 2014, entitled "MONSTER TAIL LOOM FOR FORMING BRUNNIAN LINKS" Attorney Docket No. 67467-012 PUS1	<input type="checkbox"/>
14	United States Design Patent Application No. 29/468,549 filed on October 1, 2013, entitled "BRUNNIAN LINK FORMING LOOM" Attorney Docket No. 67467-012 DUS1	<input type="checkbox"/>

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	Examiner Name	Hurley, Shaun R.
	Attorney Docket Number	67467-009 PUS1

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The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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Signature	/John M. Siragusa/	Date (YYYY-MM-DD)	2014-07-18
Name/Print	John M. Siragusa	Registration Number	46174

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Dec. 3, 1963

A. H. CLEVELAND
CONNECTION DEVICES FOR GARMENTS

3,112,491

Filed March 8, 1961

FIG. 1.

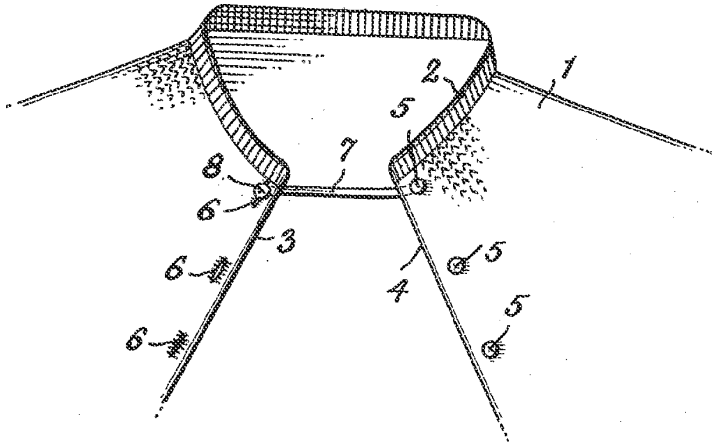


FIG. 2.

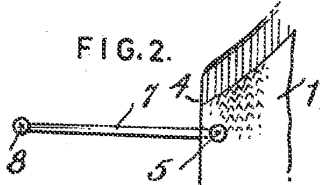


FIG. 3. 2

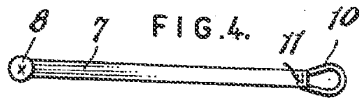
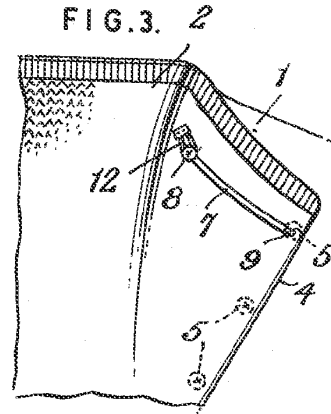
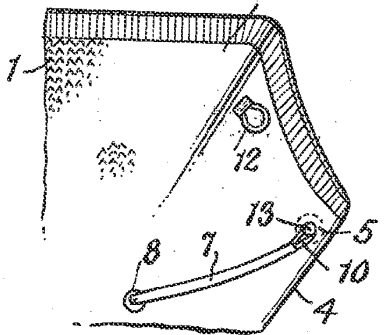


FIG. 5. 2



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3,112,491
CONNECTION DEVICES FOR GARMENTS
 Anita H. Cleveland, 3045 N. Atlantic Blvd.,
 Fort Lauderdale, Fla.
 Filed Mar. 8, 1961, Ser. No. 94,382
 3 Claims. (Cl. 2--90)

This invention relates to outer garments and more particularly to sweaters and similar articles of wearing apparel, with special reference to means by which the garment can be properly maintained in position of wear while being used over the shoulders as a wrap or cape.

Many garments such as sweaters, and particularly those intended for female wear, are often placed over the shoulders and worn as a wrap or cape at times when complete fitment of the garment in its normal position of wear is not required or desired. When such a garment is worn cape-like over the shoulders, the conventional fastening elements, such as buttons and button-holes, and which are arranged along the edges of the front opening of the garment, cannot be brought together to hold the garment in its cape-like position on the wearer. Various devices, such as chains with clips at their opposite ends, have been employed to serve as a link between the opposite edges at the front of the garment, but such devices have been found unsatisfactory for various reasons, one of which consists in the tendency of the clips to mutilate or tear the material of the garment, particularly when the same is a knitted sweater. Another reason is that the chain must be detached from the garment during laundering and thus often becomes mislaid or lost.

It is therefore one of the objects of the present invention to provide a connection device for use on sweaters and similar garments which will enable the garment to be worn cape-wise on the shoulders, which connection device serves to extend between the buttons and button-holes at the front of the garment and serves as a connecting link between the same, thereby retaining the garment in proper position of wear over the shoulders.

It is an object of the invention to provide a connection device which can, if desired, be made largely of material to resemble or be the same as that of the garment, and which can therefore present the appearance of being a part of the garment.

It is an object of the invention to provide a connection device which can, if desired, be permanently attached to the garment and be composed of a material which will enable it to be laundered along with the garment.

It is an object of the invention to provide a connection piece which can be attached inside of the garment when in a position of non-use, whereby the device will be retained in constant attachment to the garment and ready for operative positioning thereon whenever required.

With these and other objects to be hereinafter set forth in view, I have devised the arrangement of parts to be described, and more particularly pointed out in the claims appended hereto.

In the accompanying drawing, wherein an illustrative embodiment of the invention is disclosed,

FIG. 1 is a front elevational view of a part of a garment, such as a sweater, showing the same as it substantially appears when draped cape-like over the shoulders, and provided with the improved connection piece;

FIG. 2 is a front elevational view of a part of the garment to which one end of the connection piece is attached;

FIG. 3 shows how the connection piece is held within the garment when not in use;

2

FIG. 4 shows a completely detachable connection piece, and

FIG. 5 shows one manner in which a detachable connection piece, such as shown in FIG. 4, may be attached to the garment.

Referring to the drawing, 1 generally indicates a garment which may be a jacket, sweater or other like outer garment, the garment being provided with the conventional neck opening 2 surrounded by a knitted neck band, and edges 3 and 4 at the front of the garment. The front edge 3 is provided with the usual row of button-holes 6 for the reception of the buttons 6 provided along the opposite front edge 4 of the garment. In the normal position of wear of the garment, when the arms are inserted through the sleeves, the buttons 5 may be readily inserted through the button-holes 6 to thereby secure the garment around the body in the known manner. However, in cases where it is desired to drape the garment over the shoulders and without entering the arms through the sleeves, the edges 3 and 4 at the front of the garment cannot be brought sufficiently close together to enable the buttons 5 to be inserted through the button-holes 6. Therefore, in order to maintain the garment securely in properly draped or cape-like position on the wearer, the connection piece of strip indicated at 7 is employed.

The connection piece 7 may be composed of the same material or materials of which the garment is made and thus so match the same that the piece 7 appears to be a part of the garment. It can also be made of elastic or inelastic material; of contrasting or different material from the garment, and it may be knitted, woven, crocheted or otherwise formed, and is preferably of a material which enables it to be laundered along with the garment. It can also be gaily decorated or embellished to add a touch of attractiveness to the garment. The connection piece or strip 7 is shown in the drawing in a primary, simple form to facilitate the illustration of the features of the invention.

In the embodiment of the invention shown in FIGS. 1, 2 and 3, the connection piece 7 has one end attached to the back of the front part of the garment by stitching at the point 9 directly behind the upper button 5. The opposite or free end of the connection piece 7 is provided with an attached button 8 which can, if desired, match the buttons 5 in size and coloring or be identical therewith. When the garment is placed across the shoulders in the cape-like position of FIG. 1, the button 8 is entered through the top button-hole 6 and the connection piece will then bridge or span the space between the two edges 3 and 4 of the garment and will thus maintain the garment in position over the shoulders.

When the use of the connection piece is not required, such as when the garment is normally worn with the arms extended through its sleeves, the connection piece may then be located wholly within the garment and thus concealed from external view. This disposition of the connection piece will be noted in FIG. 3, wherein it will be seen that there is provided on the inside of the garment at a distance from the point of anchorage 9 of the connection piece, a loop member 12 which may be stitched or otherwise firmly attached to the inside of the garment. The distance between the loop member 12 and the point 9 is such that the connection piece, when brought inwardly and flatly against the inner surface of the garment, will have its button 8 reach the loop member 12 for insertion therethrough as seen in FIG. 3. This arrangement is such that when the connection piece is positioned within the garment as above explained and is held in such position by the engagement of the but-

3

ton 8 with the loop member 12, the connection piece will be completely and invisibly disposed within the garment. At the same time, the connection piece will always be ready at hand for use as disclosed in FIG. 1 when the garment is draped over the shoulders as distinguished from being normally and conventionally worn. The position of the loop 12 may be varied. It can be located on the inside of the neckband or at any other convenient point provided that it is within reach of the button 8 when the connection piece is disposed on the inside of the garment.

In FIG. 4 is shown another embodiment of the invention, wherein the connection piece is so constructed as to be wholly detachable from the garment. In this construction, the button 8 is provided at one end for engagement with the top button-hole 6 as heretofore described, while the other end of the connection piece is provided with a loop 10, stitched or otherwise secured at 11 to the end of the connection piece. With this arrangement, the connection piece can have the loop 10 engaged with the top button 5 and the button 8 on its opposite end engaged with the top button-hole 6. As a further alternative, the garment may be provided with a button 13 located inside of the garment behind the top button 5, and the loop 10 can be extended around the button 13 to thereby anchor the looped end of the connection piece to the garment. This connection piece can be maintained inside of the garment in position of non-use, by engaging the button 8 with the loop 12 as previously described, while the loop 10 remains attached to the button 13.

By means of the arrangements described, a connection piece is provided which connects the opposite spaced edges of a sweater or similar garment while the garment is in a draped, cape-like position over the shoulders, and thus holds the garment properly in place. The connection piece may be composed of such materials that it appears as a part of the garment and can be laundered therewith. When not in use it can be attached on the inside of the garment and thus concealed from view while being available for use whenever required. If made completely detachable, as in the case of the connection piece shown in FIG. 4, it can be attached inside of the garment at a point other than that disclosed in FIGS. 3 and 4, such as for example, along a seam on the inside of the garment with suitable attaching means there provided for its reception. In its use as herein described, the connection piece cannot harm or in any way damage the garment and can be made to form an attractive and useful adjunct to the garment.

Having thus described several embodiments of the invention, it is obvious that the same is not to be restricted thereto, but is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. In an outer garment such as a sweater having its opposite edges respectively provided with buttons and button-holes, a connection piece in the form of a strip having one end attached behind one of the buttons and having a button provided at its other end for coupling

4

with one of the button-holes, means located within the garment for engagement by the button on the end of the strip to thereby wholly dispose the strip within the garment in a position of non-use, the strip having a loop at its end remote from its button, which loop extends behind the top button on the garment, and the means located within the garment consisting of a loop for engagement with the button at the end of the strip.

2. In an outer garment such as a sweater, said sweater having its opposite edges at the front provided respectively with buttons and button-holes, a connection strip having an end attached to the inside of the garment near one of its edges, the strip having a button at its opposite end, the strip being adapted to be extended between the edges of the garment when the garment is disposed in draped position over the shoulders of the wearer and said edges are in spaced-apart relation, the strip when in such extended position, being arranged to have the button carried by it engaged with the top button-hole on the garment, and a loop carried by the garment on its inside face and near its neckband and adapted to receive the button on the strip when the strip is wholly disposed on the inside of the garment in a position of non-use.

3. A sweater or similar garment including a connection piece having a loop at one end and a button at its other end, said sweater having a button on one edge of the garment at the front thereof adjacent the neck of the sweater and a buttonhole on another edge at the front thereof adjacent the neck of the sweater to cooperate with said button, said sweater also having a second button and a loop secured to the inside of said sweater, said second button being secured behind said first mentioned sweater button, said connection piece loop being detachably connected to said second button and said connection piece button being detachably connected to said button-hole on the garment at the front thereof in one position of said connection piece, said second button and said loop on the inside of the garment being respectively detachably connected to said connection piece loop and button in a second position of said connection piece when it is desired to store said connection piece in an invisible position on the inside of said garment.

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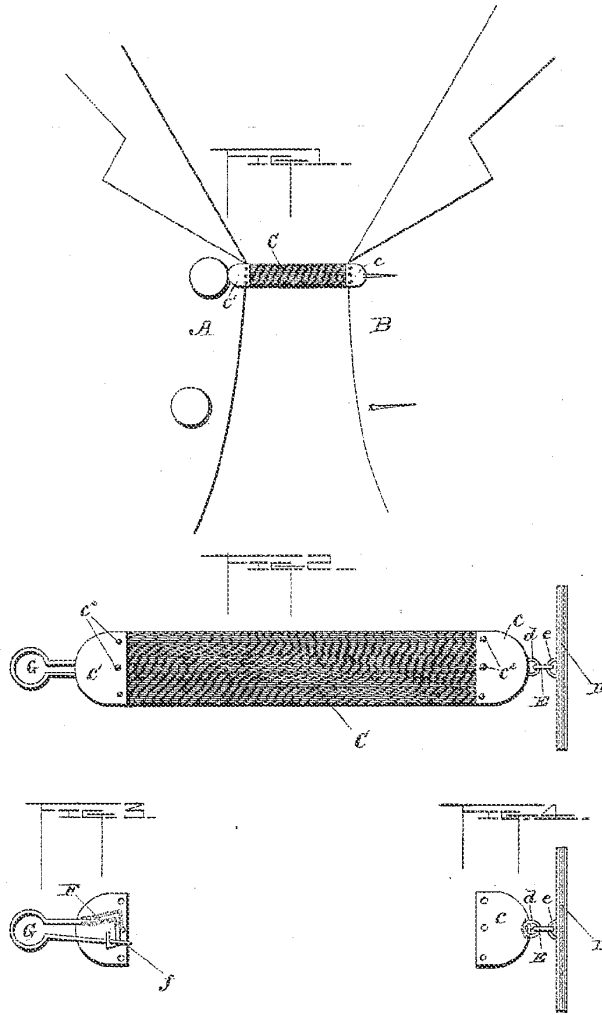
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(No Model.)

F. WOLKOW.
COAT FASTENER.

No. 426,087.

Patented Apr. 22, 1890.



W. B. Leland
Benj. C. Leland

Ferdinand Wolkow
By E. C. Leland
his Attorney

THE FORBES PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

LaRose Exp. 1019, p. 1

UNITED STATES PATENT OFFICE.

FERDINAND WOLKOW, OF MINNEAPOLIS, MINNESOTA.

COAT-FASTENER.

SPECIFICATION forming part of Letters Patent No. 426,087, dated April 23, 1890.

Application filed May 31, 1889. Serial No. 311,569. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND WOLKOW, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Coat-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in coat-fasteners.

The object is to provide a simple, neat, and effective device for holding a gentleman's coat from flying open when left unbuttoned.

With this end in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claim.

In the accompanying drawings, Figure 1 represents the fastener in position for use, holding the two front edges of the coat. Fig. 2 is an enlarged view of the fastener, and Figs. 3 and 4 represent the ends of the fastener in detail.

A represents that part of the front of the coat on which the buttons are commonly placed, and B represents that portion of the front of the coat in which the button-holes are formed, corresponding to the buttons on the part A.

The body of the fastener consists of an elastic strip, preferably a piece of flat silk elastic C, the ends of which are secured in end caps *c c'*. The end caps are preferably formed of thin metal, and the ends of the elastic are conveniently secured therein by means of small rivets *c²*. The said caps are also preferably rounded or made in any well-known neat or ornamental shape. A bar D is secured to the end cap *c* conveniently by means of a small link E, which loosely engages an eye *d*, secured to the cap *c*, and the staple or eye *e*, secured to the central portion of the bar D. The opposite cap *c'* has fixed thereto a pin of the safety-pin type, the guard-bar and back of the pin F being fixed conveniently by soldering to the cap *c'*, while the pin portion *f* is free to be thrown into and out of engage-

ment with the guard. A portion of the pin G, between its back and pin portion proper, is made in circular or curved form, and is adapted to embrace the central fastening of the coat-button, and when in such position will rest concealed beneath the button.

The bar D is intended to be inserted from the front through the button-hole and to rest concealed beneath the lapel of the coat, so that when the fastener is in position for use, as shown in Fig. 1, it presents the appearance of a pair of neatly-finished caps connected by a band of elastic material.

As thus constructed, the fastener becomes a convenient and useful article to prevent the front portions of the coat from flying open the wind, and at the same time admitting sufficient air to render the coat less oppressive than when tightly buttoned. The elastic section will also permit the insertion of the hand into either the vest or coat pockets without unfastening the fastener, and the outward curl of the front edges of the coat will be avoided.

It is evident that slight changes might be resorted to in the forms and arrangements of the several parts without departing from the spirit and scope of my invention, and hence I do not wish to limit myself strictly to the construction herein set forth; but,

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described coat-fastener, consisting of an elastic strip provided with end caps, a bar loosely connected with one of the caps, and a pin having a back portion fixed to the opposite cap, a point free to swing into and out of engagement with a guard, and a curved portion adapted to receive a button, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FERDINAND WOLKOW.

Witnesses:

FRANK R. HUBACHEK,
J. P. LANSING.

N. NEUMAN,
KNITTED SWEATER.
APPLICATION FILED OCT. 21, 1916.

1,279,411.

Patented Sept. 17, 1918.
2 SHEETS—SHEET 1.

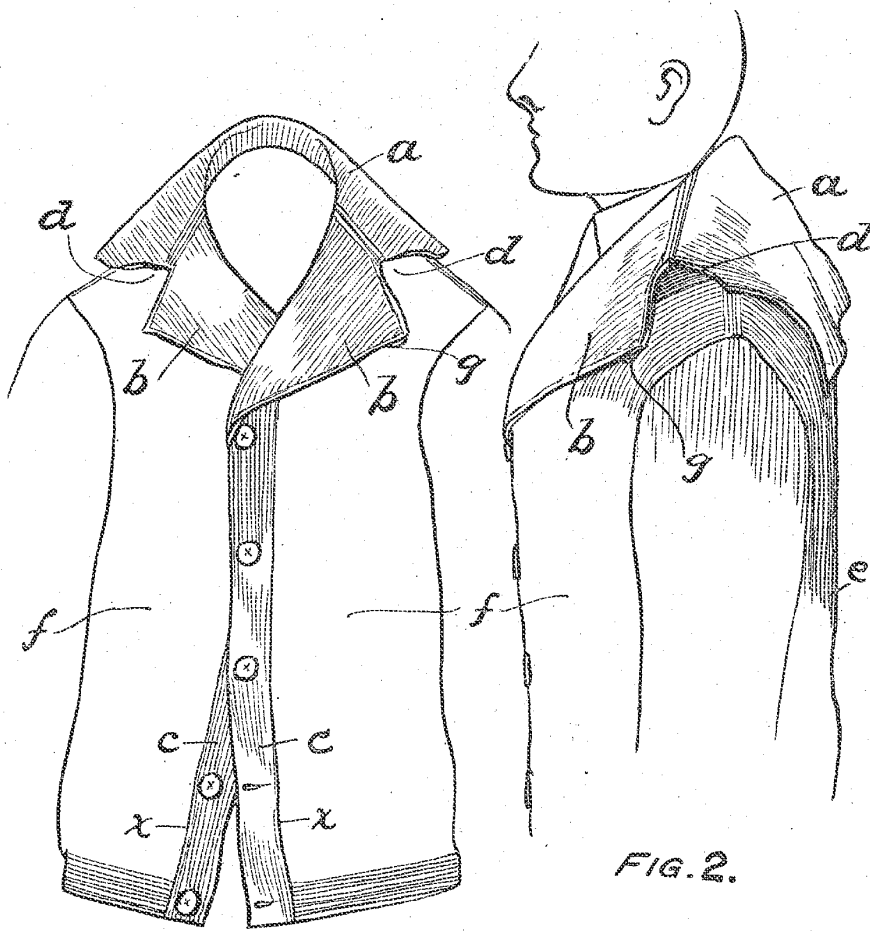


FIG. 1.

FIG. 2.

WITNESS:
Prof. Mitchell.

INVENTOR
Nathan Neuman
BY *Frank A. Bussier*
ATTORNEY.

N. NEUMAN,
 KNITTED SWEATER.
 APPLICATION FILED OCT. 21, 1916.

1,279,411.

Patented Sept. 17, 1918.
 2 SHEETS—SHEET 2.

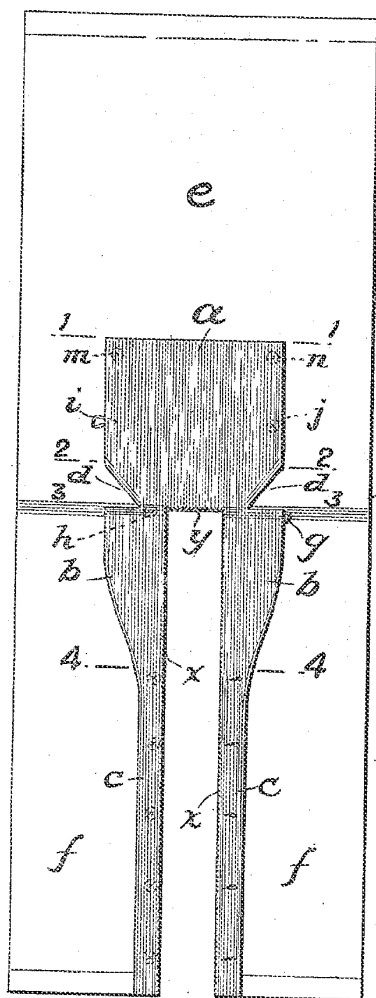


FIG. 3.

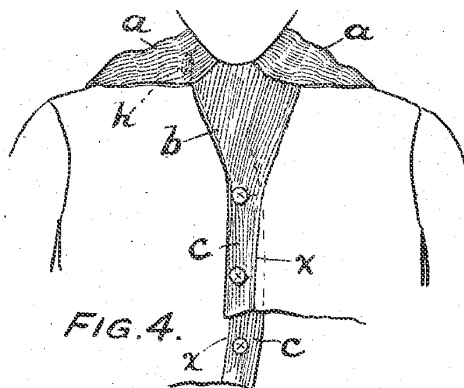


FIG. 4.

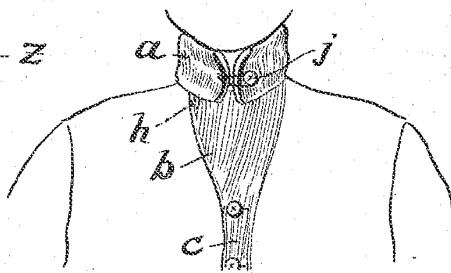


FIG. 5.

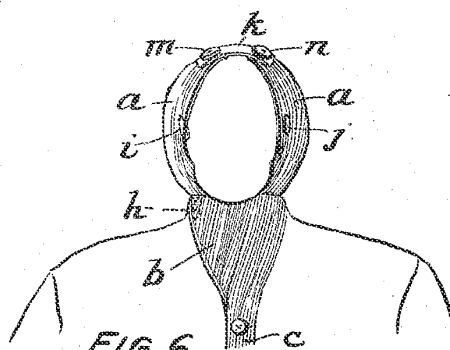


FIG. 6.

WITNESS:
Robert Mitchell

INVENTOR
 Nathan Neuman
 BY *Frank S. Buscar*
 ATTORNEY.

UNITED STATES PATENT OFFICE.

NATHAN NEUMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND GEORGE GRUHLAW, OF PHILADELPHIA, PENNSYLVANIA, COPARTNERS TRADING AS PARAGON KNITTING MILLS.

KNITTED SWEATER.

1,279,411.

Specification of Letters Patent. Patented Sept. 17, 1918.

Application filed October 21, 1916. Serial No. 126,844.

To all whom it may concern:

Be it known that I, NATHAN NEUMAN, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Knitted Sweaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to provide a knitted sweater having a lapel and collar so knit and so secured to the body of the sweater as to adapt them to be folded in different ways to produce different effects.

A preferred embodiment of the invention is shown in the drawings, in which:—

Figure 1 is a perspective view of the sweater body with the lapel and collar attached, looking toward the front. Fig. 2 is a similar view looking toward the side. Fig. 3 is a plan showing the mode of knitting. Figs. 4, 5 and 6 are partial front views showing the way in which the parts may be adjusted to produce effects different from that shown in Figs. 1 and 2.

The lapel, the collar, and the opposite margins (carrying respectively the buttons and button holes) of the front of the sweater, are knit in one piece having, preferably, the shape shown in the shaded part of Fig. 3. The knitting may start at either end of the piece. Assume that it starts at the top edge 1—1. The knitting proceeds with the formation of a fabric of uniform width to the points 2—2, where, if desired, end needles, in successive courses, may be thrown out of action one by one to form the indenture *d*, although it is not necessary to the carrying out of my invention in its broadest aspect that this should be done. When the knitting reaches the line 3—3, the collar *a* is completed. After bringing into action the end needles that have been thrown out, and throwing out of action a number of centrally located intermediate needles, the knitting then continues to the line 4—4 to form the two lapels *b*, such shape as is desired being imparted to the lapels by throwing out of action, from time to time, successive end needles. Beyond the line 4—4, the two strips

c are knit of uniform, but comparatively narrow, width, and of sufficient length to extend from the lapel to the bottom of the sweater.

The body *e* of the sweater may be knit in the form shown in the unshaded part of Fig. 2, it being understood, however, that such body also underlies the shaded part of Fig. 2, but does not underlie the slot-like space within the opposite edges *x* of the lapels *b* and strips *c* and the edge *y* of the collar *a*. In other words, the body of the sweater may be knit in the shape of a perfect rectangle and the slot included with the lines, *x, x, y* cut out; or the slot may be formed by dropping out the needles during the knitting of that part of the sweater below the line 3—3. It will be understood that the part *e* of the sweater body above the line 3—3 forms the back of the body, while the parts, *f, f*, below the line 3—3 form the front of the sweater body.

The piece *a, b, c* is applied to the face of the body, as shown in Fig. 3, and stitches thereto along the lines *x, x, y*. The outside edges of the back *e* are secured to the outside edges of the front *f*, leaving openings to form the arm-holes. This completes the sweater.

It will be understood that any type of stitch may be employed, such as half Cardigan, full Cardigan, or zig-zag, and with from a one to a five needle rack. The stitching may be varied at any location of the sweater, an example of such variation being indicated by the transverse lines extending across the body in Fig. 3.

The piece *a, b, c* may be knit with the same stitch as the body *e, f* or with a different stitch or of the same or different color. Attractive effects are produced by making the piece *a, b, c* and the body *e, f* of different colors.

Figs. 1 and 2 illustrate the sweater with the lapels *b* open and the collar *a* lying down against the back.

In Fig. 4 the lapel is closed, the loop *g* being fastened to the button *h*, the collar producing a sailor effect.

In Fig. 5, the lapel is closed as in Fig. 4 and the collar is folded upon itself, and re-

tained in that shape by fastening the loop *i* to the button *j*, thus producing a military collar effect.

In Fig. 6, the lapel is closed as in Figs. 4 and 5 and the collar is brought over the head and retained in position by a bridge strip *k* buttoned at opposite ends to the buttons *m* and *n*, thus producing a sweater suitable for use in aviation.

10 I prefer to form the collar with the indenture *o* because when so formed it is found to more readily adapt itself to different effects.

15 Having now fully described my invention, what I desire to claim and protect by Letters Patent is:

1. A sweater comprising an open front body and a piece secured thereto, said piece comprising a collar member and two spaced 20 apart strips forming the marginal front portions of the sweater and widened and shaped at the ends thereof adjoining the collar to form lapels, the body of the sweater being

secured to the inner edges of the two strips and to the lower connecting edge of the 25 collar member.

2. A sweater comprising a body composed of a back and a front, the latter comprising two sections spaced apart and united to the back, and a piece comprising a collar 30 portion applied to the back adjacent to the boundary between the front and back of the body and two strips applied to the front along the opposing edges of the spaced apart sections, said piece being secured to the 35 body along the edges of the open space between said two strips, and the collar adjacent to the boundary between the front and back being relatively narrow, thereby forming an indenture which allows the collar to 40 more readily adapt itself to different effects.

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 18th day of October, 1916.

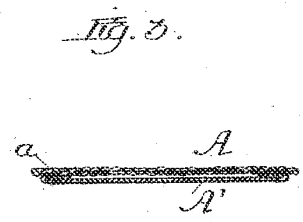
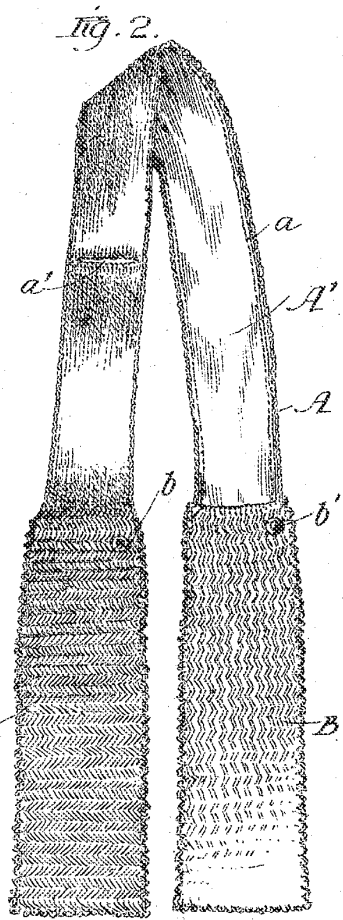
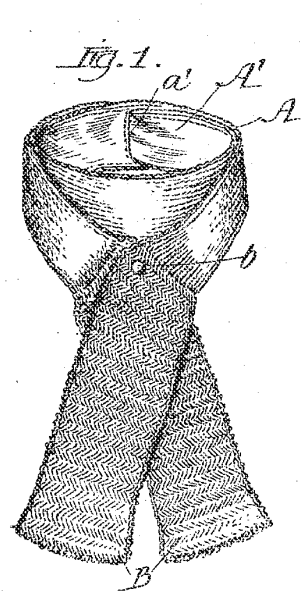
NATHAN NEUMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

N. SCHWARTZ.
MUFFLER.
APPLICATION FILED NOV. 24, 1906.

968,199.

Patented Aug. 23, 1910.



Witnesses:
Frank Blanchard
W. Goldberger

Inventor:
Nathan Schwartz
By William H. Hall,
Attorney.

THE MORRIS PETERS CO., WASHINGTON, D. C.

LaRose Exh. 1021, p. 1

UNITED STATES PATENT OFFICE.

NATHAN SCHWARTZ, OF MILFORD, ILLINOIS.

MUFFLER.

968,199.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed November 24, 1909. Serial No. 529,722.

To all whom it may concern:

Be it known that I, NATHAN SCHWARTZ, a citizen of the United States, and a resident of Milford, in the county of Iroquois and State of Illinois, have invented certain new and useful Improvements in Mufflers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a novel knitted muffler designed to be worn about the neck and on the chest to protect the parts from the cold and the elements, and the invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings, Figure 1 illustrates the manner of wearing a muffler made in accordance with my invention. Fig. 2 is a perspective view of the muffler. Fig. 3 is a transverse section of the neck band of the muffler.

A muffler made in accordance with and embodying my invention comprises a central portion or neck band A and widened end portions or tabs B, B. The said muffler is preferably knit in one piece. The neck band A is knitted with a firm close texture so as to give firmness to the band to hold its shape when in use and also to give sufficient body thereto to afford ample protection to the wearer. The ends or tabs B are made wider than the neck band so that when folded one over the other at the front they cover and protect the chest of the wearer. When made continuous or integral with the neck band they are made of a loosely knitted or relatively open texture, the loops or stitches being changed or varied to widen the tabs and to give the desired looseness of texture thereto.

The neck band A is provided on its inner side with a facing or lining strip A' of any suitable thin, relatively inextensible material, such as a cotton cloth or the like. The said facing strip is made somewhat narrower than the knitted portion of the band, and the side margins of the facing strip are turned under, and the strip is attached to the knitted neck band by lines of stitches α sewed through the hemmed or turned under portions of the strip and through the neck band in the manner indicated in Figs. 2 and

3. The said band is provided near one end thereof with a transverse slit a' , the slit being formed in the knitted band and facing strip. The cut edge of the band and strip around the slit may be finished by looped button hole stitches, or in any other suitable manner to prevent the cut fabric from raveling. The slit extends substantially throughout the width of the neck band or from one under turned hem of the facing or lining strip to the other, and said hems and stitches a , by which the strip is sewed to the band, reinforces the ends of the slit in a manner to prevent the same tearing out at its ends. The said neck band is made of a length to pass substantially twice around the neck of the wearer as indicated in Fig. 1 and the ends or tabs B, B are adapted to be folded one over the other in a manner to substantially cover the chest of the wearer.

In applying the muffler the middle portion of the band is placed with its inner side against the throat, and the two ends of the muffler passed backwardly around the neck. One end of the muffler, or that farthest remote from the slit a' , is passed through the slit and carried forwardly around to the neck and throat with its tab end lying over the breast, and the other end or tab is carried around the other side of the neck and throat and laid over the breast in overlying relation to the first mentioned tab. The tabs may be provided at their upper ends with suitable fastening devices by which to fasten the same in overlying relation over the chest. The fastening devices herein shown consists of a stud b of one tab and a socket b' on the other tab adapted to receive the stud.

When the muffler is in place it will be noted that the throat, as well as the neck, is covered by the full width of the central or intermediate portion of the neck band. The slit a' , through which one end of the muffler is passed, is located, when the muffler is fitted to the neck, at the back of the neck, and the widened ends or tabs cross each other upon the chest just below the central part of the band. It will thus be seen that the neck and throat are protected by a continuous covering extending entirely around the same and that the tabs are brought together in a manner to fully protect the chest over which they lie. The knitted fabric of the neck band affords the desired body to give the necessary warmth and fullness to

the muffler around the neck, while the facing or lining strip gives the desired firmness to the band to hold the same properly in shape.

The widened end portions or tabs may be knitted to give any desired ornamental finish to the surface or to the edges. For instance, the loops or stitches may be arranged in adjacent rows or areas with the stitches of adjacent areas or rows arranged obliquely or converging toward the line dividing said areas, as indicated in Figs. 1 and 2, thus giving a varied tinting to adjacent areas and a scalloped effect to the edges.

I claim as my invention:

1. A muffler comprising a neck band and widened ends or tabs made of a continuous strip of knitted fabric, the neck band being closely knitted to provide a relatively close firm texture and the widened ends or tabs being loosely knitted, said neck band being provided with an inextensible facing or lining strip and the neck band being made of a length to pass substantially twice around the neck and provided with a transverse slit through which one end of the muffler is adapted to be passed.

2. A muffler comprising a neck band and widened ends or tabs made of a continuous strip of knitted fabric, the neck band being closely knitted to provide a relatively close firm texture and the widened ends or tabs being loosely knitted, and an inextensible

facing or lining strip applied to the inner side of the neck band and turned under at its side margins to form hems and attached to the neck band by stitches passed through the band and hems, said band being made of a length to pass twice around the neck and provided with a transverse slit through which one end of the muffler is adapted to be passed.

3. A muffler comprising a neck band and widened ends or tabs made of a continuous strip of knitted fabric, the neck band being closely knitted to provide a relatively close firm texture and the widened ends or tabs being loosely knitted, said neck band being provided with an inextensible facing or lining strip and the neck band being made of a length to pass substantially twice around the neck and provided with a transverse slit through which one end of the muffler is adapted to be passed, and releasable fastening devices carried by the tabs for fastening them together in overlying relation.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 18th day of November A. D. 1909.

NATHAN SCHWARTZ.

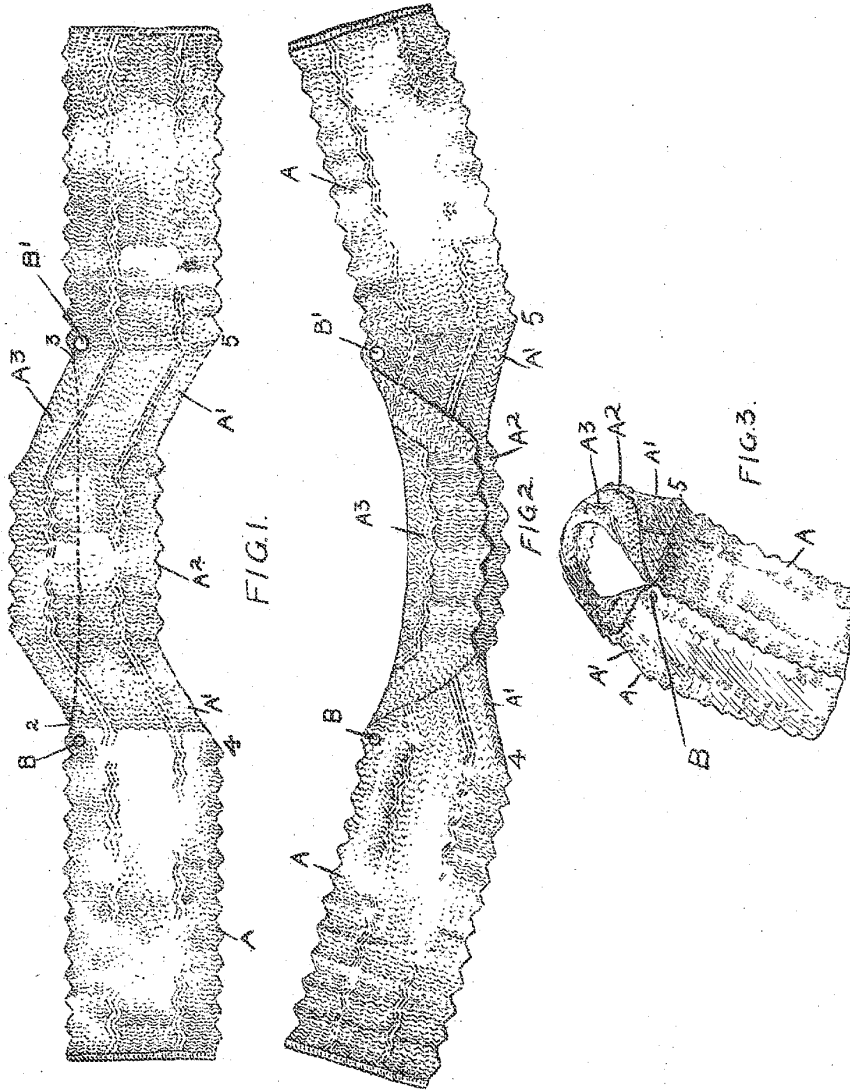
Witnesses:

WILLIAM L. HALL,
WILLIAM GOLDBERGER.

G. H. ORME.
NECKSCARF OR MUFFLER.
APPLICATION FILED MAY 13, 1910.

1,176,482.

Patented Mar. 21, 1916.



WITNESSES,
Attest: 16th Dec 1910
C. W. Waffel

INVENTOR,
G. H. ORME.
By Fred B. Jettensdubau

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

LaRose Exh. 1022, p. 1

UNITED STATES PATENT OFFICE.

GEORGE HENRY ORME, OF DUNNVILLE, ONTARIO, CANADA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ALBERT LYNN LAWRENCE, OF CLEVELAND, OHIO.

NECKSCARF OR MUFFLER.

1,176,482.

Specification of Letters Patent. Patented Mar. 21, 1916.

Application filed May 13, 1910. Serial No. 561,220.

To all whom it may concern:

Be it known that I, GEORGE HENRY ORME, of the town of Dunnville, in the county of Haldimand, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Neck-scarfs or Mufflers, of which the following is the specification.

My invention relates to improvements in mufflers, and the object of the invention is to devise a simple and handsome form of knitted muffler, which may be knitted throughout with an equal number of needles, that is without changing the number of needles in use knitting the muffler throughout, so as to form a turndown collar, which will be narrower than the aprons of the muffler, and thereby fit the neck comfortably and smoothly. In order to provide a collar-like double thickness about the neck of the wearer, both for added protection and improved appearance, my muffler is knitted of sufficient width in the neck portion, so that it may be doubled back upon itself, in the semblance of a collar.

A further object is to make the muffler full fashioned and such that when placed in position no tucking in of the muffler around the neck is necessary as required in mufflers at present in use.

My invention consists of a muffler having the aprons formed in the usual manner, and the central portion deflected to one side when being knitted in diagonal or inclined fashion with the edges parallel and the central portion correspondingly knitted to the aprons and having the edges parallel to the edges of the aprons, the one projecting side being folded back from the line where it projects beyond the muffler on to the central portion, thereby forming a narrow neck as hereinafter explained.

Figure 1, is a plan view of my muffler as knitted. Fig. 2, is a plan view when formed up in the shape ready for use. Fig. 3, is a perspective view of the muffler as it would appear when placed in position around the neck and over the waist of the wearer.

In the drawings like letters of reference indicate corresponding parts in each figure.

The method of knitting my muffler is to knit the apron portion A in the form known as the square open or honey-comb knit or rack stitch, and then to change the stitch at the portions A' into what is known as the

one in one stitch, the edges of the portion A' being arranged parallelly and diagonally, so as to deflect or throw the form of the muffler to the inclined position or project beyond one side of the apron. The central portion A² is knitted similarly to the end portions A. It will now be seen that the central portion is in the shape of a U, and the one portion projects beyond the edge of the aprons. This portion I designate A³ and such portion is folded on the dotted lines 2 3, so that the central portion lies parallel to the opposite edge, and thereby forms a turn-over collar (see Fig. 2).

The usual fastener B B' is provided in the muffler beyond the ends of the folded portion A³ forming the collar.

In placing my muffler in position on the body the recessed central portion from 4 to 5 fits around the neck and over the shoulders, and, therefore, as it does not project appreciably below the wearer's collar there is practically no tucking necessary. The central portion is narrow and the collar A³ fits around the collar of the coat or the like.

By constructing the neck portion of the muffler as herein shown and described, the added protection, in the form of an over-folded collar, is obtainable for the wearer's neck, although the article is integrally knitted of relatively light material. Of course, said neck portion intermediate of the diagonal sections must be knitted of sufficient width to admit of folding the same back upon itself, while the diagonal portions may be relatively short in order to provide merely the desired offset for forming the collar. I lay no claim, however, to such offset neck portion, but

My said invention resides in the following combination, to wit:—

1. In an integrally knitted muffler, the combination with two end-portions, of an intermediate neck portion adapted to encircle the wearer's neck, comprising two relatively short offset sections, and an intermediate relatively wide rectangular neck section of even width folded back upon itself to form a double thickness or collar portion for encircling the neck only, whereby the appearance and protective effect of said muffler are enhanced, substantially as set forth.

2. A muffler of knitted fabric having its

end portions in approximate alinement and its central portion offset therefrom and of approximately the same width throughout to afford a projecting central portion to form a collar, and fastening means at the edge of the end portions from which the collar projects, substantially as set forth.

3. A muffler of knitted fabric of approximately the same width throughout having straight end portions in alinement with each other and a central neck portion offset from the end portions and connected therewith by

oblique connecting portions to form a projection at the middle of the muffler, said projection being adapted to be folded along the line of the edges of the end portions to form a collar, and fastening means along the edges of the end portions from which the collar projects, substantially as set forth.

GEORGE HENRY ORME.

Witnesses:

J. A. NEVENS,
W. D. SWAYZE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

S. S. SAMPLINER.
NECK GARMENT.
APPLICATION FILED DEC. 27, 1916.

1,405,744.

Patented Feb. 7, 1922.

FIG. 1.

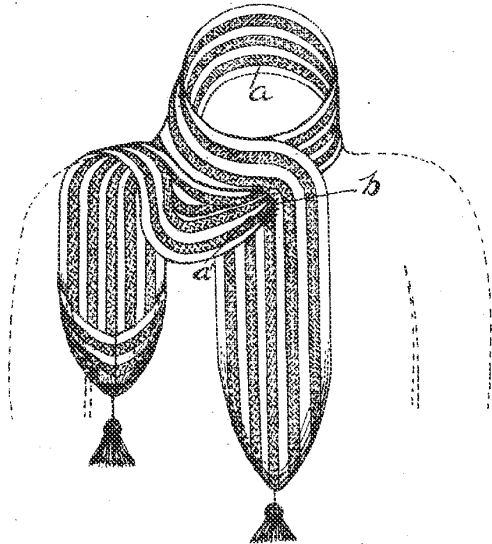


FIG. 2.

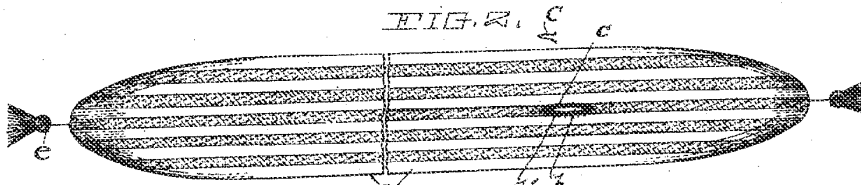
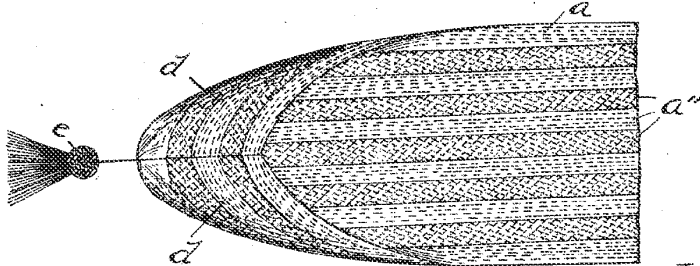


FIG. 3.



Inventor,
Samuel S. Sampliner,
By A. D. [Signature]
Attorney

UNITED STATES PATENT OFFICE.

SAMUEL S. SAMPLINER, OF CLEVELAND, OHIO, ASSIGNOR TO THE RICH-SAMPLINER KNITTING MILLS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

NECK GARMENT.

1,405,744.

Specification of Letters Patent.

Patented Feb. 7, 1922.

Application filed December 27, 1916. Serial No. 139,159.

To all whom it may concern:

Be it known that SAMUEL S. SAMPLINER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, has invented certain new and useful Improvements in Neck Garments, of which the following is a specification.

My invention relates to improvements in neck garment and has for its object the provision of means for readily fastening the same so that the ends may be used as a chest protector and shoulder drape.

The improvement of my invention is embodied in a continuously knitted neck scarf of such length as to depend along the chest of the wearer and pass over the shoulder respectively; the fastening means comprising a longitudinal slot in the knitted fabric of which the garment is made. This slot may be reinforced by means of a suitable clip, if found necessary, for positively fastening the garment upon the wearer's neck. Moreover, the ends preferably are folded back upon themselves to form a pointed terminal of augmented body, better adapting the same to be passed through the slot.

I am aware that neck garments such as scarfs and ties have previously been devised, wherein a transverse slot was formed in the substantially inextensible neck portion thereof, through which one end was adapted to be passed. However, my improvement differs therefrom in providing a garment entirely of knitted fabric, preferably longitudinally ribbed or chain knitted, wherein a longitudinal slot is provided between adjacent ribs or chains thereof. These bordering ribs tend to close upon an inserted end portion, under strain, while a transverse slot tends to open under similar conditions. Moreover, my improved garment preferably is knitted of fleecy clinging yarns and, as stated, the slot may be augmented by a suitable metallic or other clip. A longitudinal slot will be found to present little tendency to cause unravelling of the fabric and this slight tendency is easily overcome by an elastic stitching or overcasting, which does not impair the clinging tendency of the longitudinally positioned slot.

The features of my invention may best be described in connection with the accompanying drawings, wherein,

Fig. 1 is a view of my improved neck

garment as positioned for use upon the neck of the wearer,

Fig. 2 is a plan view thereof partially broken away with a detail showing one form of fastening clip, and

Fig. 3 is an enlarged plan view of one end, diagrammatically indicating the ribbed knitted structure.

Throughout the different figures, I have employed the same character of reference to indicate similar parts. My improved neck garment may advantageously be made of continuous lengths of knitted fabric or material cut to the desired length, suitably slotted longitudinally adjacent to the neck portion proper, and preferably stitched terminally to form pointed ends both for structural and ornamental purposes. The neck garment *a* is shown of longitudinally striped material, wherein a slot *b* is cut intermediately of its sides and adjacent to the neck portion thereof. This material is knitted with longitudinally extending ribs *a'*, indicated upon the white stripes by the parallel lines of dashes, and on the colored stripes by the interrupted diagonal lines, as conventional showing of this ribbon material, although the striping is merely a matter of choice. Preferably, the knitted fabric from which the garment is made has longitudinal ribs *a''* or is chain knitted of soft fleecy yarns, so that the slot *b* tends to close and there is very little unravelling. However, this may be entirely overcome by elastic stitches *b'* about the slot, which in some cases may be used to overcast a small V-shaped metallic clip *c* at the inner end of the slot, as indicated in Fig. 2. Ordinarily, this is not necessary unless the garment is to be very firmly held about the wearer's neck. The corners or ends *d* of the fabric may advantageously be folded back upon the body and stitched together to form a pointed reinforced terminal, which is better adapted to be passed through the slot, and optionally tassels *e* or other ornamentation may be supplied to the neck garment.

As shown in Fig. 1, the right hand end of the garment is passed through the slot, thereby causing said slot to elastically grip the same intermediately of a pleated portion *a'*, and thereby holding the garment easily in place about the wearer's neck. This right hand end may be draped over

the shoulder, while the left hand end hangs down to afford a covering for the chest immediately above the collar opening of the wearer's coat. This securing means ordinarily is sufficient to insure a snug fit without other adjuncts or fastening means which might become broken or lost. The clip *c*, however, may be resorted to for gripping the edge of the inserted end and holding it securely against displacement. The garment as thus constructed is both simple, cheap, and affords adequate protection for the neck and chest.

Having now described my invention, I claim as new and desire to secure by Letters Patent, the following:—

1. A neck scarf, comprising a length of longitudinally ribbed fabric adapted to encircle the wearer's neck and terminally lie along his chest; said fabric having a longitudinal slit between adjacent ribs of the knitting, through which an end is adapted to be passed and closely held in adjusted positions about the neck.

2. A neck garment of the class described, comprising a length of loosely knitted fabric adapted to encircle the wearer's neck and terminally extend along the wearer's chest and shoulder; said fabric having a slit formed intermediately thereof, through which an end is adapted to be passed, and a closed V-shaped clip associated with said slit at its retaining terminal for holding the inserted end portion in adjusted position, substantially as set forth.

3. A neck and chest covering, comprising a length of longitudinally ribbed fabric of uniform width; said fabric having a constricting slot between two adjacent ribs shorter than the width of the fabric, positioned near its middle portion, through which an end is adapted to be passed and held in adjusted position, and an end folded back upon itself a short distance for entering said slot readily.

In testimony whereof I do now affix my signature.

SAMUEL S. SAMPLINER.

Electronic Patent Application Fee Transmittal

Application Number:	13626057				
Filing Date:	25-Sep-2012				
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT				
First Named Inventor/Applicant Name:	Cheong Choon Ng				
Filer:	John M. Siragusa/Amy Spaulding				
Attorney Docket Number:	67467-009 PUS1				
Filed as Large Entity					
Utility under 35 USC 111(a) Filing Fees					
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)	
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	19618884
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	18-JUL-2014
Filing Date:	25-SEP-2012
Time Stamp:	13:12:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	9036
Deposit Account	501482
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	7-18-14_IDS_009PUS1.pdf	614211 19d83a3966cd4f76bbac37572497751518470e9c	no	8
Warnings:					
Information:					
2	Non Patent Literature	MARCH28_YOUTUBE.pdf	196135 5af79d72e41a9eed1886c42affc2f4b53485013	no	1
Warnings:					
Information:					
3	Non Patent Literature	MARCH30_YOUTUBE.pdf	112018 b7a9c71030ef138f8e1ad657ec3a96800139993c	no	1
Warnings:					
Information:					
4	Non Patent Literature	JUNE8_YOUTUBE.pdf	121005 185e41db3fccc024dae0fda9e6fa8bca676a92b	no	1
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Information:					
5	Non Patent Literature	DefendantsPreliminaryInvalidityContentions.pdf	1433037 497bc40684cf0cb970f8985ed3ac3bd2bd5468b	no	87
Warnings:					
Information:					
6	Other Reference-Patent/App/Search documents	Decision_Institute_May_20_2014_filed.pdf	10082622 7834100239bafedea03c343d5993d80f28361a8	no	24
Warnings:					
Information:					
7	Other Reference-Patent/App/Search documents	PetitionerRequestforRehearing.pdf	173967 94ec8fcb039d462cb81887dd79a91a50a830be53	no	12
Warnings:					
Information:					
8	Other Reference-Patent/App/Search documents	FirstAmendedListofExhibits.pdf	90351 3dead173667793e00c6fe43a4ec6c8c778e5b3cb	no	2
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Information:					

9	Other Reference-Patent/App/Search documents	CoverLetterAccompanyingExhibits.pdf	82945	no	2
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10	Other Reference-Patent/App/Search documents	Ex1018_Cleveland_US3112491.pdf	5143649	no	3
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11	Other Reference-Patent/App/Search documents	Ex1019_Wolkow_US426087.pdf	1848422	no	2
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12	Other Reference-Patent/App/Search documents	Ex1020_Neuman_US1279411.pdf	4917706	no	4
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13	Other Reference-Patent/App/Search documents	Ex1021_Schwartz_US968199.pdf	4274766	no	3
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Information:					
14	Other Reference-Patent/App/Search documents	Ex1022_Orme_US1176482.pdf	4733117	no	3
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15	Other Reference-Patent/App/Search documents	Ex1023_Sampler_US1405744.pdf	4655107	no	3
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16	Other Reference-Patent/App/Search documents	001PUS2_APPLICATIONDRAWING_NGS_13938717.pdf	543047	no	21
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17	Other Reference-Patent/App/Search documents	001PUS4_APPLICATIONDRAWING_NGS_14329099.pdf	547251	no	22
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Information:					

18	Other Reference-Patent/App/Search documents	009PUS3_APPLICATIONDRAWINGS_14331456.pdf	207856 d41e15aab8c39937b31b456719cbfc6e9e7f4943	no	15
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Information:					
19	Other Reference-Patent/App/Search documents	011PUS1_FiledAppDrawings.pdf	349124 792062e948826e17c5a87784d3337d3431a2011a	no	14
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20	Other Reference-Patent/App/Search documents	011DUS1_FiledAppDrawings.pdf	216084 40767bb2afe911caa653fd80c80f5f6f2625fbaa	no	3
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Information:					
21	Other Reference-Patent/App/Search documents	012DUS1_FiledAppDrawings.pdf	42920 64fbdbf5641b46d6c78de51c37ba5c28ae360e57	no	2
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Warnings:					
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23	Non Patent Literature	JULY6_YOUTUBE.pdf	107655 24c06423524d99a1d13d683cb1884ebf1e07ec82	no	1
Warnings:					
Information:					
24	Fee Worksheet (SB06)	fee-info.pdf	30518 321694bbe6f897189db7224b9e199f3050f5cc8	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			40718061		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/626,057	09/25/2012	Cheong Choon Ng	67467-009 PUS1

**CONFIRMATION NO. 7803
IMPROPER CPOA LETTER**

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009



Date Mailed: 06/12/2014

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 06/06/2014. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney has not been accepted because the party who is giving power has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A party who is not the applicant must become the applicant in accordance with 37 CFR 1.46(c) and appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. For a reissue application, reexamination proceeding, or supplemental examination proceeding, a patent owner who was not the applicant under 37 CFR 1.46 must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).

/qtran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (13/626,057), FILING OR 371(C) DATE (09/25/2012), FIRST NAMED APPLICANT (Cheong Choon Ng), ATTY. DOCKET NO./TITLE (67467-009 PUS1)

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

CONFIRMATION NO. 7803
IMPROPER CFR REQUEST



Date Mailed: 06/12/2014

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT

Power of Attorney, Claims, Fees, System Limitations, and Miscellaneous

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

- The ADS submitted on 06/06/2014 attempts to change the applicant but cannot be entered. Any request to change the applicant once the applicant has been specified must include (1) an application data sheet specifying the new applicant in the Applicant Information section, and (2) a statement under 37 CFR 3.73(c) (USPTO Form PTO/AIA/96 or an equivalent) to show chain of title to the new applicant. The application data sheet must contain markings to show the information that is being changed, with underlining for additions and strike-through or brackets for deletions. See 37 CFR 1.76(c)(2).

/qtran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

Practitioners associated with Customer Number:

26096

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

The address associated with Customer Number:

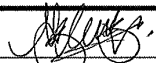
26096

OR

<input type="checkbox"/>	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Choon's Design Inc.
48813 West Road
Wixom, MI 48393**A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.****SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	3/26/14
Name	Cheong Choon Ng	Telephone	248-231-6158
Title	President - Choon's Design Inc.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Cheong Choon Ng
Application No./Patent No.: 13/626,057 Filed/Issue Date: September 25, 2012
Titled: BRUNNIAN LINK MAKING DEVICE AND KIT
Choon's Design Inc., a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. The assignee of the entire right, title, and interest.
2. An assignee of less than the entire right, title, and interest (check applicable box):
- The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
 - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

- B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Cheong Choon Ng To: Choon's Design LLC

The document was recorded in the United States Patent and Trademark Office at Reel 031741, Frame 0452, or for which a copy thereof is attached.

2. From: Choon's Design LLC To: Choon's Design Inc.

The document was recorded in the United States Patent and Trademark Office at Reel 032505, Frame 0098, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

Additional documents in the chain of title are listed on a supplemental sheet(s).

As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/John M. Siragusa/ _____

Signature

John M. Siragusa _____

Printed or Typed Name

June 6, 2014 _____

Date

Attorney of Record - 46174 _____

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	19232190
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	06-JUN-2014
Filing Date:	25-SEP-2012
Time Stamp:	12:29:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA_Transmittal.pdf	165440 8dde071e90b9e118f969da7321eb99349a986c9d	no	1

Warnings:

Information:

2	Power of Attorney	Executed_POA_ChoonsDesignI NC.pdf	88932 <small>bcdbc1a66fee76ab138aa3357b4ed1ec184 52491</small>	no	1
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73.	373c_Statement.pdf	119591 <small>380f9555fb533c2e0e705fe5bfb479215f088 5a5</small>	no	3
Warnings:					
Information:					
Total Files Size (in bytes):				373963	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

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TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	13/626,057
Filing Date	September 25, 2012
First Named Inventor	Cheong Choon Ng
Title	BRUNNIAN LINK MAKING DEVICE AND KIT
Art Unit	3765
Examiner Name	Hurley, Shaun R.
Attorney Docket Number	67467-009 PUS1

SIGNATURE of Applicant or Patent Practitioner			
Signature	/John M. Siragusa/	Date (Optional)	June 6, 2014
Name	John M. Siragusa	Registration Number	46174
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1	
		Application Number		
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT			
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.				

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2. (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	--

Inventor Information:

Inventor 1					<input type="button" value="Remove"/>
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Cheong	Choon	Ng		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Novi	State/Province	MI	Country of Residence i	US
Mailing Address of Inventor:					
Address 1	44926 Paine Dr.				
Address 2					
City	Novi	State/Province	MI		
Postal Code	48377	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					<input type="button" value="Add"/>

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.	
Customer Number	26096
Email Address	<input type="button" value="Add Email"/> <input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		
Attorney Docket Number	67467-009 PUS1	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	
Filing By Reference :			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

Request Early Publication (Fee required at time of Request 37 CFR 1.219)

Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number			

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13/626057	Continuation in part of	13/227638	2011-09-08
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13/227638	Claims benefit of provisional	61/410399	2010-11-05
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
- NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Authorization to Permit Access:

Authorization to Permit Access to the Instant Application by the Participating Offices

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant 1			<input type="button" value="Remove"/>
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
<input type="button" value="Clear"/>			
<input type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117	<input type="radio"/> Joint Inventor	
<input type="radio"/> Person to whom the inventor is obligated to assign.		<input type="radio"/> Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/>			
If the Applicant is an Organization check here. <input checked="" type="checkbox"/>			
Organization Name	Choon's Design Inc.		
Mailing Address Information:			
Address 1	48813 West Road		
Address 2			
City	Wixom	State/Province	MI
Country ⁱ	US	Postal Code	48393
Phone Number		Fax Number	

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.				
Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
				<input type="button" value="Remove"/>
If the Assignee or Non-Applicant Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix
Mailing Address Information For Assignee including Non-Applicant Assignee:				
Address 1				
Address 2				
City		State/Province		
Country i	Postal Code			
Phone Number		Fax Number		
Email Address				
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications				
Signature	/John M. Siragusa/		Date (YYYY-MM-DD)	2014-05-21
First Name	John M.	Last Name	Siragusa	Registration Number
				46174
Additional Signature may be generated within this form by selecting the Add button.				<input type="button" value="Add"/>

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-009 PUS1
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	19088901
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	21-MAY-2014
Filing Date:	25-SEP-2012
Time Stamp:	12:14:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	5-21-14_UpdatedADS_67467-009PUS1.pdf	1565179 a5353c7100925552c68dfacc148636060a6f1a6	no	7

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 4 columns: APPLICATION NUMBER (13/626,057), FILING OR 371(C) DATE (09/25/2012), FIRST NAMED APPLICANT (Cheong Choon Ng), ATTY. DOCKET NO./TITLE (67467-009 PUS1)

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

CONFIRMATION NO. 7803
IMPROPER CPOA LETTER



Date Mailed: 04/25/2014

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 04/21/2014. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney has not been accepted because the party who is giving power has not been identified. Power of attorney may only be signed by the applicant for patent (37 CFR 1.42) or the patent owner. A party who is not the applicant must become the applicant in accordance with 37 CFR 1.46(c) and appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. For a reissue application, reexamination proceeding, or supplemental examination proceeding, a patent owner who was not the applicant under 37 CFR 1.46 must appoint any power of attorney in compliance with 37 CFR 3.71 and 3.73. See 37 CFR 1.32(b)(4).

/masfaw/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/626,057	09/25/2012	Cheong Choon Ng	67467-009 PUS1

CONFIRMATION NO. 7803

IMPROPER CFR REQUEST

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009



Date Mailed: 04/25/2014

RESPONSE TO REQUEST FOR CORRECTED FILING RECEIPT


Power of Attorney, Claims, Fees, System Limitations, and Miscellaneous

In response to your request for a corrected Filing Receipt, the Office is unable to comply with your request because:

- Any request to correct or update the name of the applicant must include an application data sheet (ADS) in compliance with 37 CFR 1.76 specifying the correct or updated name of the applicant in the applicant information section. Any request to change the applicant after an original applicant has been specified under 37 CFR 1.46(b) must include a new ADS in compliance with 37 CFR 1.76 specifying the applicant in the applicant information section and comply with 37 CFR 3.71 and 3.73. See 37 CFR 1.46(c).

/masfaw/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Application Number 	Application/Control No. 13/626,057	Applicant(s)/Patent under Reexamination NG, CHEONG CHOON

Document Code - DISQ	Internal Document – DO NOT MAIL
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TERMINAL DISCLAIMER	<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> DISAPPROVED
Date Filed : 4/21/14	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

3 td's Jean Proctor

U.S. Patent and Trademark Office

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	13/626,057
Filing Date	September 25, 2012
First Named Inventor	Cheong Choon Ng
Title	BRUNNIAN LINK MAKING DEVICE AND KIT
Art Unit	3765
Examiner Name	Hurley, Shaun R.
Attorney Docket Number	67467-009 PUS1

SIGNATURE of Applicant or Patent Practitioner			
Signature	/John M. Siragusa/	Date (Optional)	April 21, 2014
Name	John M. Siragusa	Registration Number	46174
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.

*Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TERMINAL DISCLAIMER TO OBTAIN A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 67467-009 PUS1
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In re Application of: Cheong Choon Ng
Application No.: 13/626,057
Filed: September 25, 2012
For: BRUNNIAN LINK MAKING DEVICE AND KIT

The applicant, Choon's Design Inc., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 8485565 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the **prior patent**, "as the term of said **prior patent** is presently shortened by any terminal disclaimer," in the event that said **prior patent** later:
expires for failure to pay a maintenance fee;
is held unenforceable;
is found invalid by a court of competent jurisdiction;
is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
has all claims canceled by a reexamination certificate;
is reissued; or
is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check either box 1 or 2 below, if appropriate.

1. The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. The undersigned is an attorney or agent of record. Reg. No. 46174

/John M. Siragusa/
Signature

April 21, 2014
Date

John M. Siragusa
Typed or printed name

Attorney of Record
Title

248-988-8689
Telephone Number

Terminal disclaimer fee under 37 CFR 1.20(d) included.

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	13626057			
Filing Date:	25-Sep-2012			
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT			
First Named Inventor/Applicant Name:	Cheong Choon Ng			
Filer:	John M. Siragusa/Amy Spaulding			
Attorney Docket Number:	67467-009 PUS1			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	5	40	200
Independent Claims in Excess of 3	2201	1	210	210
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Extension - 2 months with \$0 paid	2252	1	300	300
Miscellaneous:				
Statutory or Terminal Disclaimer	1814	3	160	480
Total in USD (\$)				1190

Electronic Acknowledgement Receipt

EFS ID:	18813899
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	21-APR-2014
Filing Date:	25-SEP-2012
Time Stamp:	14:26:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1190
RAM confirmation Number	663
Deposit Account	501482
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:						
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)	
1		4-21-14_Response_67467-009P US1.pdf	40136 411a2ba82d8e21f283e4982b9a743a2c88c b702a	yes	8	
Multipart Description/PDF files in .zip description						
		Document Description	Start	End		
		Amendment/Req. Reconsideration-After Non-Final Reject	1	1		
		Specification	2	2		
		Claims	3	6		
		Applicant Arguments/Remarks Made in an Amendment	7	8		
Warnings:						
Information:						
2	Power of Attorney	POA_Transmittal.pdf	160526 367c596e709ca8b37d5d76b0c9bd4d2163 9504d7	no	1	
Warnings:						
Information:						
3	Power of Attorney	Executed_POA_ChoonsDesign NC.pdf	88932 bccbc1a66fee76ab138aa3357b4ed1ec184 52491	no	1	
Warnings:						
Information:						
4	Assignee showing of ownership per 37 CFR 3.73.	373c_Statement.pdf	119588 ca6f4b625a6087c9e1e268d3d7ca1bf6e823 bbcd	no	3	
Warnings:						
Information:						
5	Terminal Disclaimer Filed	Terminal_Disclaimer_13938717 .pdf	247026 8eedf0c899453fc9417501648c722d4189e5 2fb8	no	2	
Warnings:						
Information:						
6	Terminal Disclaimer Filed	Terminal_Disclaimer_8684420. pdf	160386 45960a214f86510332d0301d3fe314e80b8 a635e	no	2	
Warnings:						
Information:						

7	Terminal Disclaimer Filed	Terminal_Disclaimer_8485565.pdf	160438 79750d24fda824e4385ec0b85a302919f66dcd4	no	2
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	35298 2f7b1aca5ea4b8f6598ebdf2e1510c01c22015bc	no	2
Warnings:					
Information:					
Total Files Size (in bytes):				1012330	
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Cheong Choon Ng
Serial No.: 13/626,057
Filed: 09/25/2012
Group Art Unit: 3765
Examiner: Hurley, Shaun R.
Title: BRUNNIAN LINK MAKING DEVICE AND KIT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

RESPONSE

Dear Sir:

This paper is responsive to the Office Action mailed on November 19, 2013.

AMENDMENT

IN THE SPECIFICATION:

Please amend paragraph [0031] as follows:

Referring to Figures 10, 11 and 12, another template 15 includes a holder 17 that supports pins 21. Each of the pins 21 includes a first or top end 23 and a base end 27. The pins 21 each include arms 19 disposed on either side of an access groove 25. The entire template 15 is a single part that is held during creation of the article. The pins 21 provide support for the elastic member 18 during fabrication of a linked article similar to that indicated at 26 in Figure 2. The example template 15 is utilized according to the same assembly procedure set out in Figures 9a-k.

IN THE CLAIMS:

Please amend the claims as follows:

1. (CURRENTLY AMENDED) A device for creating an item consisting of a series of links, the device comprising:
a template including at least two pins spaced ~~part~~part from each other, each of the pins including a first end, a base end, and an access groove, wherein the first end is interrupted by the access groove.
2. (ORIGINAL) The device as recited in claim 1, including a bridge portion extending between the base end of each of the pins.
3. (CURRENTLY AMENDED) The device as recited in ~~claim 2~~claim 1, wherein the access groove is disposed on outward facing sides of the template.
4. (CURRENTLY AMENDED) ~~The device as recited in claim 2.~~A device for creating an item consisting of a series of links, the device comprising:
a template including at least two pins spaced part from each other, each of the pins including a first end, a base end, and an access groove; and
a bridge portion extending between the base end of each of the pins, wherein each of the access grooves extend entirely through each of the pins including the first end and the base end.
5. (ORIGINAL) The device as recited in claim 1, wherein each of the pins include a barrel portion between the first end and the base end.
6. (ORIGINAL) The device as recited in claim 5, wherein the base end includes a diameter greater than a diameter of the barrel portion.
7. (CANCELLED)

8. (CURRENTLY AMENDED) A method of creating a linked item comprising the steps of:

assembling a first end of an elastic band on to a first pin of a template, where the template includes at least two pins spaced ~~part~~apart from each other, each of the pins including a first end, a base end, and an access groove;

looping a second end of the elastic band around a second pin of the template;

assembling the second end of the elastic band onto the first pin;

pulling a second elastic band through the access groove and making a loop with the first and second ends of the second elastic band; and

capturing and pulling subsequent ends through the looped ends of the previous elastic band until a desired link length and configuration is obtained.

9. (ORIGINAL) The method as recited in claim 8, wherein capturing one end of the elastic band includes using a hook tool reaching into the access groove of the pin to extend below the top most elastic band and grasp a bottom elastic band with the hook tool.

10. (ORIGINAL) The method as recited in claim 9, including the step of inserting ends of the elastic bands into a clip to form the linked item.

11. (CURRENTLY AMENDED) A kit for creating an item consisting of a series of links, the kit comprising:

a template including at least two pins spaced ~~part~~apart from each other, each of the pins including a first end, a base end, and an access groove; and

at least one clip including inward facing ends ~~disposed on each side of an opening~~ for securing ends of the series of links together.

12. (CURRENTLY AMENDED) The kit as recited in claim 11, wherein the clip comprises a C-shape and the inward facing ends extend in a direction perpendicular to ~~the an~~an opening.

13. (ORIGINAL) The kit as recited in claim 12, wherein the clip defines an interior space for receiving portions of elastic members and the inward facing ends extend into the interior space for preventing elastic members from moving through the opening.

14. (CURRENTLY AMENDED) The kit as recited in ~~claim 12~~ claim 11, including a hook for manipulating elastic members relative to each other.

15. (ORIGINAL) The kit as recited in claim 14, including a plurality of elastic members for forming the series of links.

16. (ORIGINAL) The kit as recited in claim 15, wherein the series of links comprise a series of Brunnian links.

17. (NEW) The kit as recited in claim 11, wherein the first end is interrupted by the access groove.

18. (NEW) The kit as recited in claim 17, wherein the base end is interrupted by the access groove.

19. (NEW) The kit as recited in claim 11, including a bridge portion extending between the base end of each of the pins.

20. (NEW) The kit as recited in claim 19, wherein the access groove is disposed on outward facing sides of the template.

21. (NEW) The kit as recited in claim 11, wherein the first end includes an outwardly extending flange.

22. (NEW) The device as recited in claim 1, wherein the first end includes an outwardly extending flange.

23. (NEW) The device as recited in claim 4, wherein the access groove is disposed on outward facing sides of the template.

24. (NEW) The device as recited in claim 4, wherein each of the pins include a barrel portion between the first end and the base end.

25. (NEW) The device as recited in claim 4, including a clip that defines an interior space for receiving portions of elastic members.

26. (NEW) The device as recited in claim 4, including a hook for manipulating elastic links supported on the template during assembly of an item consisting of a series of links.

REMARKS

Applicant thanks the Examiner for the detailed remarks and analysis. Claims 1-16 remain pending. Claims 1, 3, 4, 11 and 12 have been amended. Claim 7 is cancelled and new claims 17-26 added.

Drawings

The specification has been amended to include reference numerals 19 and 25. The amendments do not present new matter.

Objections

Applicant has amended claims 1, 8 and 11 to correct the informality noted by the Examiner. The amendments change the word “part” to “apart”. This amendment does not present new matter.

Claims

Amended claim 1 includes the features originally presented in claim 7. Claim 7 was indicated as being allowable if rewritten in independent form and therefore amended claim 1 is in allowable form. Amended claim 1 recites a device for creating an item consisting of a series of links, the device comprising: a template including at least two pins spaced apart from each other, each of the pins including a first end, a base end, and an access groove, wherein the first end is interrupted by the access groove.

Claims 2, 3, 5 and 6 depend ultimately from claim 1 and are therefore also in allowable condition.

Claim 4 was indicated as being allowable if rewritten in independent form, including any intervening claims. Applicant has rewritten claim 4 in independent form.

Claims 8-10 are allowed.

Double Patenting

Applicant is submitting with this response a proper terminal disclaimer disclaiming any term beyond that of U.S. Patent No. 8,485,565, U.S. Application serial No.: 13/938,717 and U.S.

Application serial No.: 13/951,558, now U.S. Patent No. 8,684,420. Accordingly, claims 11-16 are now in allowable form.

New Claims

Applicant has added new claims 17-26. Claims 17-21 depend ultimately from claim 11. Claim 22 depends from claim 1 and claims 23-26 depend ultimately from claim 4. None of the amendments present new matter.

Claim 17 recites that the first end is interrupted by the access groove. Claim 18 recites that the base end is interrupted by the access groove. Claim 19 recites a bridge portion extending between the base end of each of the pins. Claim 20 recites that the access groove is disposed on outward facing sides of the template. Claim 21 recites that the first end includes an outwardly extending flange.

Claim 22 depends from claim 1 and recites that the first end includes an outwardly extending flange.

Claim 23 depends from claim 4 and recites that the access groove is disposed on outward facing sides of the template. Claim 24 depends from claim 4 and recites that each of the pins includes a barrel portion between the first end and the base end. Claim 25 depends from claim 4 and a clip that defines an interior space for receiving portions of elastic members. Claim 26 recites a hook for manipulating elastic links supported on the template during assembly of an item consisting of a series of links.

Applicant believes that no additional fees are necessary; however, the Commissioner is authorized to charge to Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., for any additional fees or credit any overpayment.

Respectfully Submitted,

CARLSON, GASKEY & OLDS, P.C.

/John M. Siragusa/

John M. Siragusa
Registration No. 46,174
400 West Maple Road, Suite 350
Birmingham, Michigan 48009
Telephone: (248) 988-8360
Facsimile: (248) 988-8363

Dated: April 21, 2014

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---	--

In re Application of: Cheong Choon Ng
 Application No.: 13/626,057
 Filed: September 25, 2012
 For: BRUNNIAN LINK MAKING DEVICE AND KIT

The applicant, Cheong's Design Inc., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of **prior patent** No. 8684420 as the term of said **prior patent** is presently shortened by any terminal disclaimer. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the **prior patent** are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

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Check either box 1 or 2 below, if appropriate.

1. The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

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2. The undersigned is an attorney or agent of record. Reg. No. 46174

/John M. Siragusa/ April 21, 2014
 Signature Date

John M. Siragusa
 Typed or printed name

Attorney of Record 248-988-8689
 Title Telephone Number

- Terminal disclaimer fee under 37 CFR 1.20(d) included.

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I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

Practitioners associated with Customer Number:

26096

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

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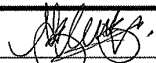
26096

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Assignee Name and Address: Choon's Design Inc.
48813 West Road
Wixom, MI 48393**A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.****SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	3/26/14
Name	Cheong Choon Ng	Telephone	248-231-6158
Title	President - Choon's Design Inc.		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Cheong Choon Ng
Application No./Patent No.: 13/626,057 Filed/Issue Date: September 25, 2012
Titled: BRUNNIAN LINK MAKING DEVICE AND KIT
Choon's Design Inc., a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. The assignee of the entire right, title, and interest.
2. An assignee of less than the entire right, title, and interest (check applicable box):
- The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
 - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Cheong Choon Ng To: Choon's Design LLC

The document was recorded in the United States Patent and Trademark Office at Reel 031741, Frame 0452, or for which a copy thereof is attached.

2. From: Choon's Design LLC To: Choon's Design Inc.

The document was recorded in the United States Patent and Trademark Office at Reel 032505, Frame 0098, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

Additional documents in the chain of title are listed on a supplemental sheet(s).

As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/John M. Siragusa/ _____

Signature

John M. Siragusa _____

Printed or Typed Name

April 21, 2014 _____

Date

Attorney of Record - 46174 _____

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**TERMINAL DISCLAIMER TO OBTAIN A PROVISIONAL DOUBLE PATENTING
REJECTION OVER A PENDING "REFERENCE" APPLICATION**

Docket Number (Optional)
67467-009 PUS1

In re Application of: Cheong Choon Ng

Application No.: 13/626,057

Filed: September 25, 2012

For:
BRUNNIAN LINK MAKING DEVICE AND KIT

The applicant, Choon's Design Inc., owner of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending **reference** Application Number 13/938717 filed, July 10, 2013, as the term of any patent granted on said **reference** application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending **reference** application. The applicant hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the **reference** application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the applicant does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term of any patent granted on said **reference** application, "as the term of any patent granted on said **reference** application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending **reference** application," in the event that: any such patent granted on the pending **reference** application expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

Check either box 1 or 2 below, if appropriate.

1. The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee.

I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

2. The undersigned is an attorney or agent of record. Reg. No. 46174

<u>/John M. Siragusa/</u> Signature	<u>April 21, 2014</u> Date
<u>John M. Siragusa</u> Typed or printed name	
<u>Attorney of Record</u> Title	<u>248-988-8689</u> Telephone Number

- Terminal disclaimer fee under 37 CFR 1.20(d) is included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.321. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875			Application or Docket Number 13/626,057	Filing Date 09/25/2012	<input type="checkbox"/> To be Mailed
ENTITY: <input type="checkbox"/> LARGE <input checked="" type="checkbox"/> SMALL <input type="checkbox"/> MICRO					
APPLICATION AS FILED – PART I					
(Column 1)		(Column 2)			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	
<input type="checkbox"/> BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A		
<input type="checkbox"/> SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A		
<input type="checkbox"/> EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A		
TOTAL CLAIMS <small>(37 CFR 1.16(j))</small>	minus 20 =	*	X \$ =		
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	minus 3 =	*	X \$ =		
<input type="checkbox"/> APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>					
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		

APPLICATION AS AMENDED – PART II								
(Column 1)		(Column 2)		(Column 3)				
AMENDMENT	04/21/2014	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 25	Minus	** 20	= 5	X \$40 =	200	
	Independent (37 CFR 1.16(h))	* 4	Minus	***3	= 1	X \$210 =	210	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))							
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
TOTAL ADD'L FEE						410		

(Column 1)		(Column 2)		(Column 3)				
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))							
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
TOTAL ADD'L FEE								

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
 /JUDY
 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit	3765		
	Examiner Name	Hurley, Shaun R.		
	Attorney Docket Number	67467-009 PUS1		

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	5426788		1995-06-27	Meltzer	
	2	7040120		2006-05-09	Hunter	
	3	8418434		2013-04-16	Carruth et al.	
	4	D592537		2009-05-19	Darnell	

If you wish to add additional U.S. Patent citation information please click the Add button. **Add**

U.S. PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Published Application citation information please click the Add button. **Add**

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² j	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	3765
	Examiner Name	Hurley, Shaun R.
	Attorney Docket Number	67467-009 PUS1

	1	2147918	GB		1985-05-22	University of Technology (United Kingdom)	<input type="checkbox"/>
--	---	---------	----	--	------------	--	--------------------------

If you wish to add additional Foreign Patent Document citation information please click the Add button **Add**

NON-PATENT LITERATURE DOCUMENTS **Remove**

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Petition for Inter Partes Review of U.S. Patent No. 8,485,565 and Exhibits, filed in the United States Patent and Trademark Office	<input type="checkbox"/>

If you wish to add additional non-patent literature document citation information please click the Add button **Add**

EXAMINER SIGNATURE

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	3765
	Examiner Name	Hurley, Shaun R.
	Attorney Docket Number	67467-009 PUS1

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John M. Siragusa/	Date (YYYY-MM-DD)	2014-03-20
Name/Print	John M. Siragusa	Registration Number	46174

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

(12) UK Patent Application (19) GB (11) 2 147 918 A

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D04B 3/00
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D1C 5B
(56) Documents cited
None
(58) Field of search
D1C

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(54) Knitting apparatus

(57) Apparatus for hand knitting comprises hooked pins 5 arranged in two spaced parallel rows on a frame 1 with a slot 3 between the rows for the passage of knitted material. The pins 5 are formed with grooves 7 to receive a knitting hook and to facilitate the entry of the latter into the grooves sloping surfaces 11 of the frame are formed with lead-in grooves 3. In an alternative embodiment the pins which comprise base members forming the lead-in grooves are independently and detachably clipped onto longitudinal bars of the frame. The frame may have selectable detent positions round pivots 15.

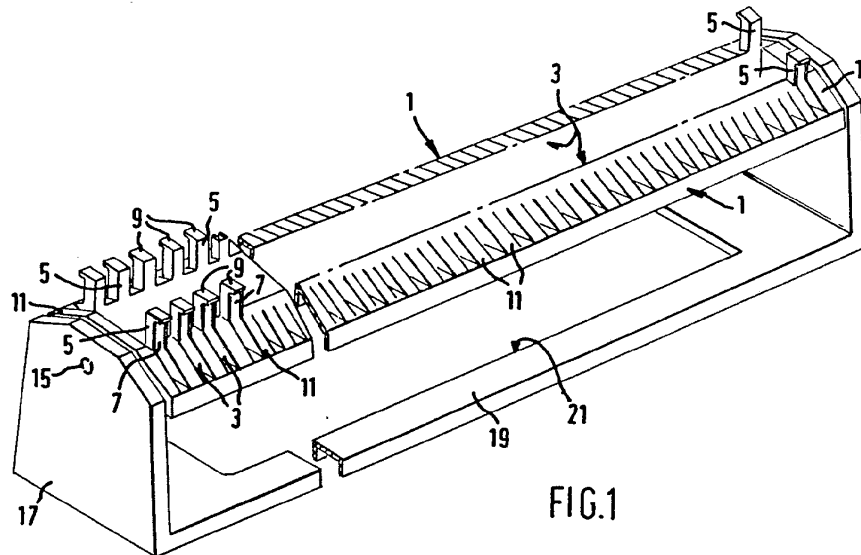


FIG.1

GB 2 147 918 A

The drawing originally filed was informal and the print here reproduced is taken from a later filed formal copy.

LaRose Exh. 1015, p. 1

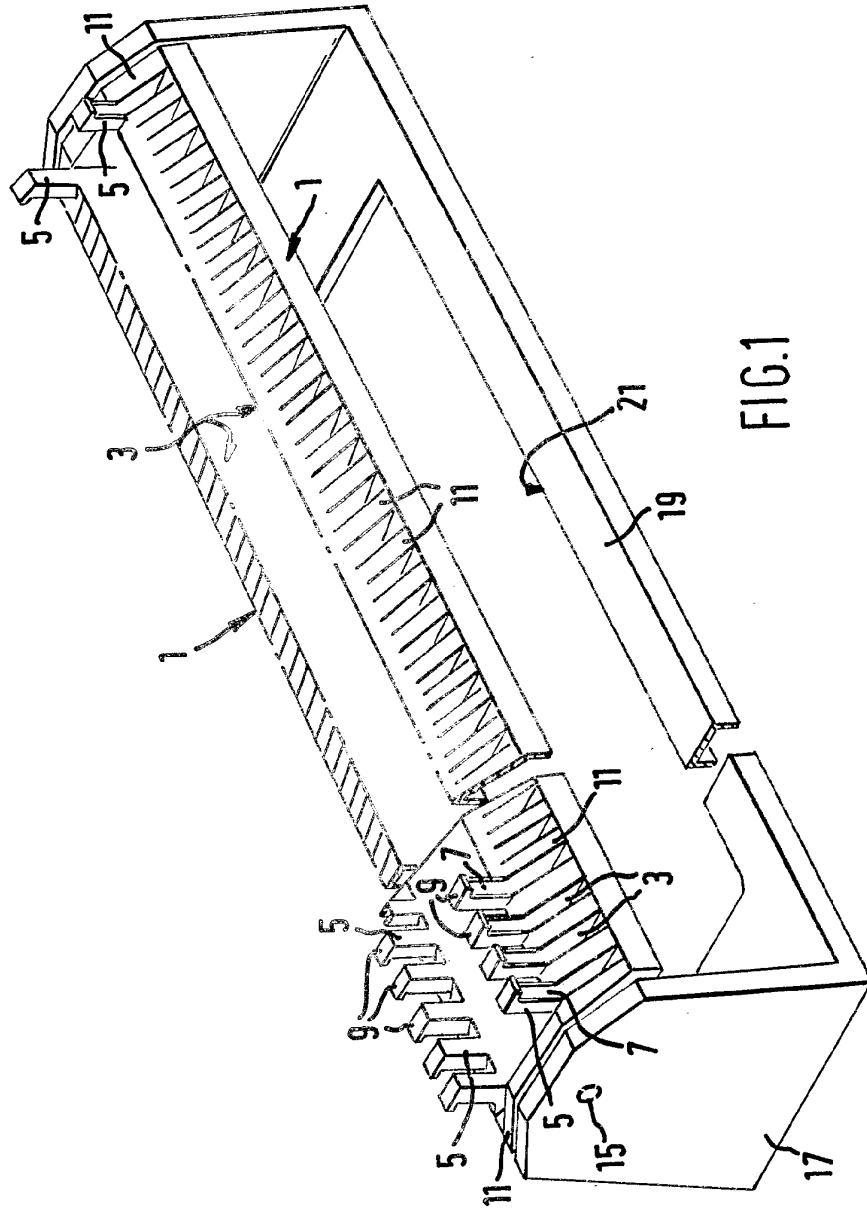


FIG. 1

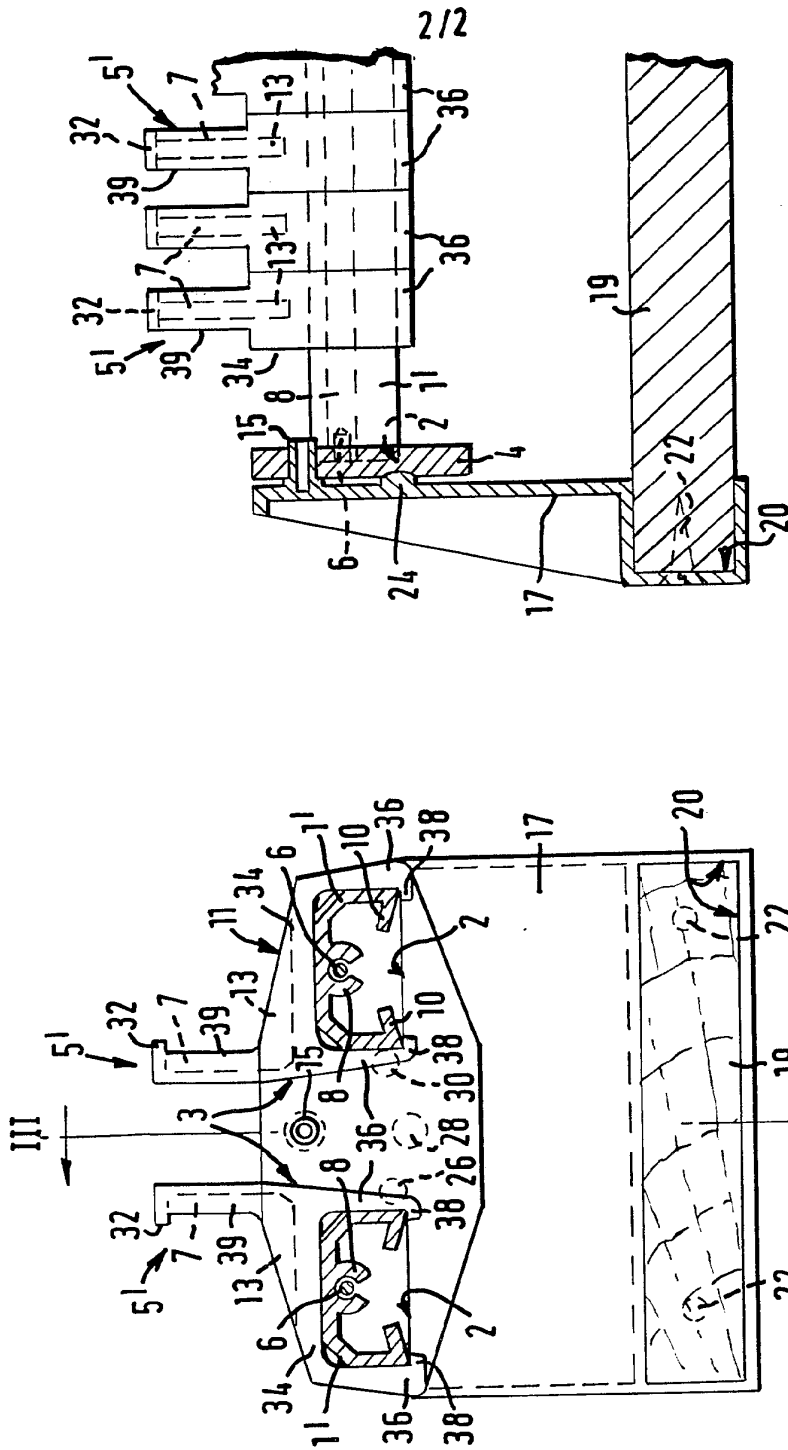


FIG. 3

FIG. 2

SPECIFICATION

Knitting apparatus

5 This invention is concerned with knitting apparatus particularly apparatus for knitting by hand.

10 It is known to provide a knitting apparatus (particularly for use by children) comprising an elongate frame member, conveniently made of plastics material, having a slot extending lengthwise of the frame member (the slot extending completely through the frame member) and the latter being provided with two

15 rows of pins arranged to extend upwardly from the frame member at evenly spaced localities along the opposite sides of the slot. The pins each have a groove extending along the pin at a locality opposite to the slot and the pins have a hooked formation, each hook being formed by a small plate-like member which caps the grooved portion of each pin. In using the known apparatus the wool (or other cord-like material) to be used in the

20 knitting operation is first passed around the required number of upstanding pins in the two rows thereof twice (the free end of the wool being anchored eg. to one of the pins) and, by means of a suitable hand-held hook, the second strand is raised over the hooked portion of each pin in turn to form a stitch loop around each pin. The wool is then laid around the pins again and the loops are lifted over the newly laid strand and the process is

25 repeated to form a knitted fabric which passes downwardly through the slot as the operation proceeds. Conveniently the upstanding pins are spaced from each other by spaces approximately equal to the width of the pins.

30 Attempts have been made to utilise apparatus as just described as an aid to enable handicapped people to knit. However, the known apparatus is flimsy and the frame is likely to bend when gripped. Furthermore,

35 particularly with certain types of disability, the knitter finds it difficult to locate the hook correctly in the groove of each pin in order to engage the stitch loop surrounding that pin. For example a person having poor co-ordination of hand movement is likely to insert the hook through the gap between the adjacent pins instead of into the groove in the pin, so that, when the hook is raised, the stitch loops are pulled off the pins and the stitches are

40 'dropped'.

45 With a view to overcoming or minimising the above-mentioned difficulties, it is proposed to provide a substantially rigid frame member, preferably of die-cast aluminium,

50 with sloping upper faces so formed that the thickness (depth) of the frame member increases from the outside edge to the slot which is surrounded by the upstanding pins. The sloping faces are provided with grooves

55 which lead into the grooves in the correspond-

ing pins thus providing lead-in guides to help the user locate the hook in the grooves in the pins and thus facilitate the formation of the stitches.

70 With a view to providing further improvements in the aforesaid knitting apparatus it is proposed to provide an apparatus in which what are described previously as upstanding (hooked) pins (which pins are integrally

75 formed with a slotted frame-member) are replaced by a plurality of separately formed hooked teeth, which are conveniently manufactured, by an injection moulding technique, from a plastics material, preferably Nylon 6.

80 The teeth are assembled in the apparatus by being clipped over a pair of tooth supporting bars which are arranged to lie parallel to each other and provide, between them, a slot through which the knitting passes. The tooth

85 supporting bars are conveniently made from an extruded aluminium hollow profile of generally rectangular cross-section cut to appropriate length, opposite end portions of the bars being secured in rectangular housings in the form of depressions formed in a pair of

90 end plates, thus providing a rigid tooth-supporting structure of good torsional rigidity and which is unlikely to distort under hand pressure during the knitting operation. The end plates just referred to may conveniently be formed by zinc die-castings.

95 The tooth-supporting structure is conveniently pivotally supported in a support frame in a manner generally similar to that described above. However, with a view to providing for

100 ease of assembly, cheapness of manufacture, and robustness, the support frame preferably comprises a pair of support end plates, again made by a zinc die-casting process and

105 shaped to receive opposite end portions of a wooden base-plate to which the end plates are secured. The end plates are also provided, during the die-casting process, with pivot pins for the tooth-supporting structure and with a locating member for locating the same in one of three different positions of tilt relatively to the support frame.

110 Thus an apparatus in accordance with the present invention may be assembled from a very few cheaply produced, but strong and light, components. Sets of teeth of different pitch may be provided to provide for different sized stitches in knitted articles made on the apparatus. The teeth may be clipped on to the two supporting bars either in staggered or

115 opposed relationship. Gaps may be left between adjacent teeth if required to provide readily for different stitch patterns.

120 There will now be given, with reference to the accompanying drawings, a more detailed description of an apparatus, illustrative of the invention. It is to be clearly understood that this apparatus is selected for description by way of exemplification, and not by way of

125 limitation, of the invention.

130

In the accompanying drawings:

Figure 1 is a perspective view of a first embodiment of apparatus according to the invention having a die-cast aluminium frame:

5 Figure 2 is a cross-sectional view of a second embodiment of the apparatus having replaceable knitting teeth; and

10 Figure 3 is a view, chiefly in longitudinal cross section on the line III-III in Figure 2, of one end portion of the illustrative apparatus.

15 As will be seen in Figure 1, the apparatus comprises an elongate frame member 1, preferably of die-cast aluminium, having a slot 3 extending lengthwise of the frame member, the groove extending completely through the frame member. Upstanding from the frame member, at opposite sides of the slot 3, are two rows of spaced pins 5 having grooves 7 extending lengthwise of the pins (ie. 20 heightwise) at outwardly facing sides thereof. The pins are hooked as shown in the drawing, the hooked formation being provided by small plate-like portions 9 which cap the upper ends of the grooves 7. The frame member 1 is 25 provided with sloping upper surfaces 11 (ie. the depth, or thickness, of the frame member increases from its outside edges to the slot 3) in which are formed grooves 13 leading into the corresponding grooves 7 in the pins 5.

30 The frame member 1 is pivotally supported on pins 15 extending inwardly from upstanding end portions 17 of a support frame having a slot 21 in its base through which the knitted material can pass, and may be locked in one 35 of three positions (either a central position as shown, or inclined somewhat towards one side or the other) for convenience in handling. The locking means comprises a fixed pin (not shown) which extends from one of the up- 40 standing end portions 17 with one of the three locating holes formed in the frame member 1. To release the frame member from the locating pin, the frame member can be displaced lengthwise of its pivot pins 15 against 45 the action of a spring (not shown).

50 It will be appreciated that the grooves 13 leading into the grooves 7 in the pins are likely to facilitate the correct engagement of the knitting hook with the grooves in the pins and the sloping surfaces 11 tend to act as barriers barring unwanted entry of the hook into the spaces between the pins.

55 The apparatus shown in Figures 2 and 3 comprises a plurality of upstanding pins (in the form teeth 5' hereinafter described) which correspond to the pins 5 referred to previously and are arranged in two spaced parallel rows to provide a slot 3 between the rows through which slot the knitted material passes during a 60 knitting operation.

65 In the illustrative apparatus the teeth 5' are detachably supported on a pair of spaced bars 1'. The bars 1' are cut from an extruded aluminium hollow profile having a generally rectangular cross-section as shown in Figure 2

70 to provide a rigid but light construction. Opposite end portions of the bars 1' are received in rectangular recesses or housings 2 (commensurate with the cross-sectional dimensions of the bar so as to provide a tight fit therefor) formed in end plates 4, to which the bars are firmly secured by self-tapping screws 6 extending through bores in the end plates into a split-cylindrical bead 8 provided within each 75 bar 1'. Inwardly directed flanges 10 provide strength to the bar profile. The arrangement described provides a light but strong structure for supporting the teeth 5' which is unlikely to twist or distort during use of the apparatus.

80 The end-plates 4 are pivotally supported on pivots 15 extending from a pair of support end plates 17, these plates being secured to opposite end portions of a wooden base-plate 19 which end portions are received within 85 housings 20 formed in the support end plates 17 and secured by screws 22.

90 The tooth-supporting frame, comprising the bars 1' and the end-plates 4, may be located in a selected one of three possible positions of tilt about the pivots 15, by means of a poppet 24 (Figure 3) extending from one support end plate 17 into one of three detents 26, 28, 30 95 formed in the adjacent end plate 4 (Figure 2). The spacing between the support end plates 17 and the end plates 4 of the tooth-supporting frame is arranged to be such as to allow slight endwise movement of the frame relatively to the pivots 15 to allow disengagement 100 of the poppet 24 for the detents 26, 28, 30, a compression spring (not shown) being provided around the pivot 15 between the end plates 4 and 17 at the opposite end of the apparatus to that shown in Figure 3 to hold 105 the poppet 24 and selected detent in engagement.

110 The support end plates 17 are also conveniently formed by a zinc die-casting process whereby the pivot 15 and detent 24 may be formed integrally with the plates 17 (only 50% of which will be provided with the poppets 24, since they are not required on the plate 17 at the opposite end of the apparatus).

115 As will be clear from Figures 2 and 3 each hook 5' comprises an upwardly extending portion 39 terminating in an upper plate-like overhanging portion 32 providing the hook proper for retaining the wool on the hooks until lifted thereof during the knitting operation by manipulation of a hand-held knitting hook (not shown). For guiding the latter each hook 5' is provided with a groove 7 extending 120 along the upstanding portion 39, while a base portion 34 of each hook has a lead-in guide groove 13 which leads into the groove 7 for the purpose described above in relation to 125 Figure 1. Each base portion 34 is provided with two depending legs 36 having inturned portions 38 arranged to clip around the support bars 1' as shown in Figure 2, and to hold 130

the teeth firmly in place thereon. By springing apart the legs 36 slightly a tooth may be easily detached from its bar, either for repositioning to provide gaps as above-mentioned, or when it is desired to replace the teeth with teeth of a different pitch. Each groove 13 is formed between wall portions of the base portion 34 of each tooth 5' provided with sloping upper surfaces 11 providing barriers between the grooves 13 in adjacent teeth tending to bar unwanted entry of the knitting hook into spaces between the hooks 5' for the purpose described previously.

15 CLAIMS

1. Knitting apparatus comprising an elongate frame member having a slot extending lengthwise of the frame member and completely through the frame member and knitting pins disposed on the frame member at evenly spaced locations in two rows along opposite sides of the slot, the pins extending upwardly from the frame member and being of hooked formation and grooves extending along the pins at locations opposite to the slot for guiding a knitting hook, wherein the frame member is substantially rigid and is formed with sloping upper faces so formed that the depth of the frame member increases from the outside edge to the slot which is surrounded by the upstanding pins, the sloping faces being provided with grooves that lead into grooves in the corresponding pins thus providing lead-in guides that help the user locate the knitting hook in the grooves in the pins and thus facilitate the formation of stitches.
2. Apparatus according to claim 1 wherein the frame comprises longitudinal members and end plates and the end plates are pivoted in a stand, releaseable locking means holding the frame in one of a number of predetermined attitudes relative to the stand.
3. Apparatus according to claim 2, wherein the longitudinal members are defined by bars of non-circular section on which clip removable knitting pins.
4. Apparatus according to claim 3 wherein each knitting pin is moulded in a plastics material and comprises a body, legs depending from ends of the body to clip onto a longitudinal bar and an upstanding hook portion.
5. Apparatus according to claim 4 wherein there are also mounted on the bars dummy pins devoid of hooks.
6. Apparatus according to claim 3, 4 or 5, wherein the releaseable locking means comprises a poppet and detents.
7. Knitting apparatus substantially as hereinbefore described with reference to and as illustrated in Figure 1 or Figures 2 and 3 of the accompanying drawings.

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(12) **United States Patent**
Ng

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(45) **Date of Patent:** **Jul. 16, 2013**

(54) **BRUNNIAN LINK MAKING DEVICE AND KIT**

(76) Inventor: **Cheong Choon Ng**, Novi, MI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 98 days.

(21) Appl. No.: **13/227,638**

(22) Filed: **Sep. 8, 2011**

(65) **Prior Publication Data**

US 2012/0112457 A1 May 10, 2012

Related U.S. Application Data

(60) Provisional application No. 61/410,399, filed on Nov. 5, 2010.

(51) **Int. Cl.**
B65H 69/04 (2006.01)

(52) **U.S. Cl.**
USPC **289/17**

(58) **Field of Classification Search**
USPC 289/2, 17, 16.5, 18.1; 273/281, 288, 273/309
See application file for complete search history.

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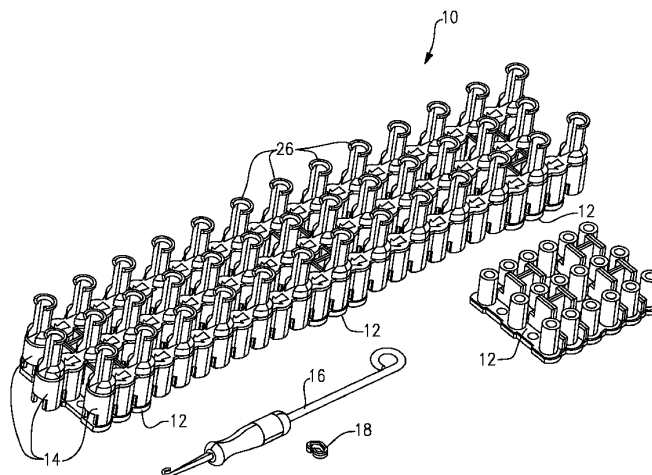
Primary Examiner — Shaun R Hurley

(74) *Attorney, Agent, or Firm* — Carlson, Gaskey & Olds, P.C.

(57) **ABSTRACT**

A Brunnian link is a link formed from a closed loop doubled over itself to capture another closed loop to form a chain. The example kit provides for the successful creation of unique wearable articles using Brunnian link assembly techniques and includes several pin bars that are supported in a desired special orientation by at least one base. The desired special orientation is dependent on the desired linked configuration of the completed article. The base and pin bars may be assembled in various combination and orientations to provide endless variation of completed link orientations. Additional bases and pin bars can be to further expand possible completed article creation.

18 Claims, 10 Drawing Sheets



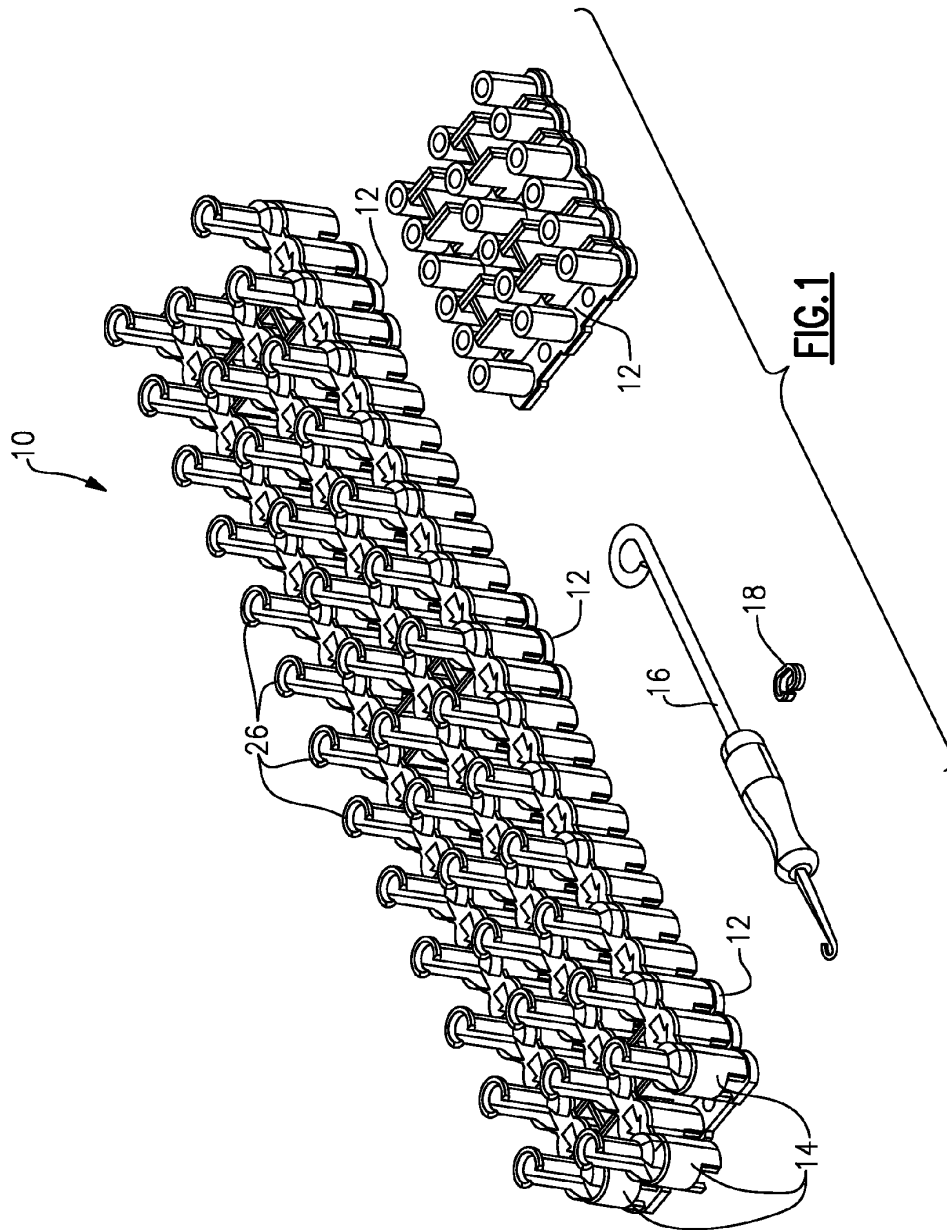
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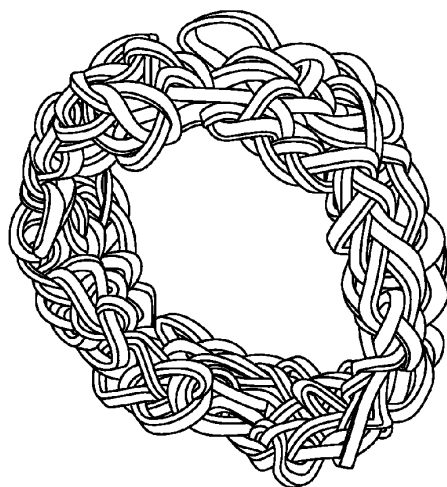


FIG. 2

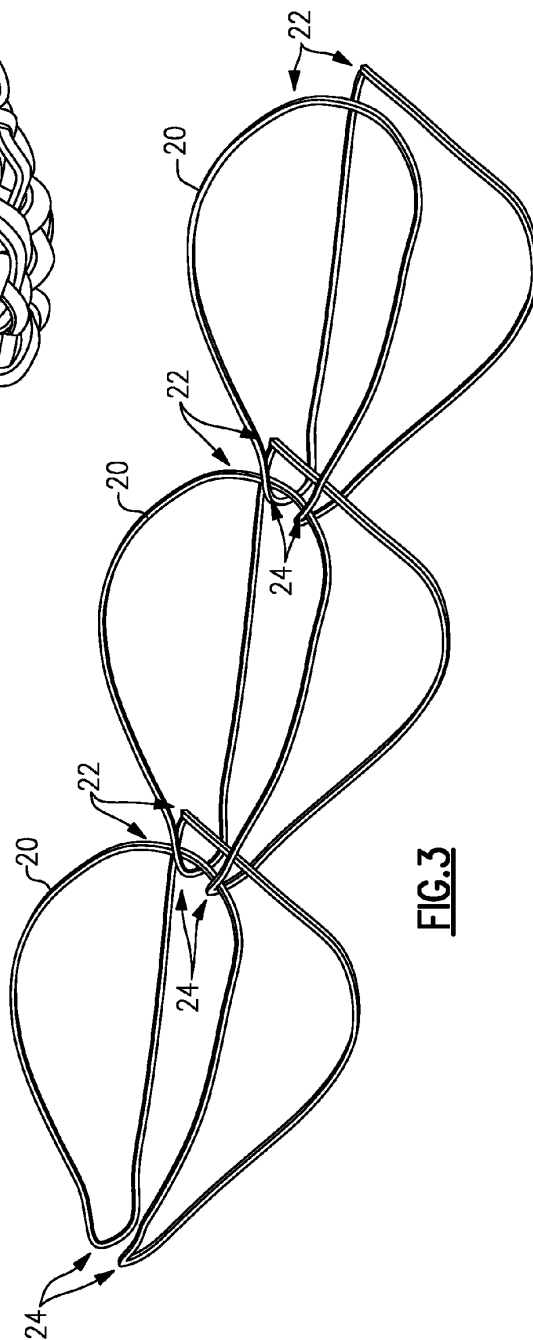


FIG. 3

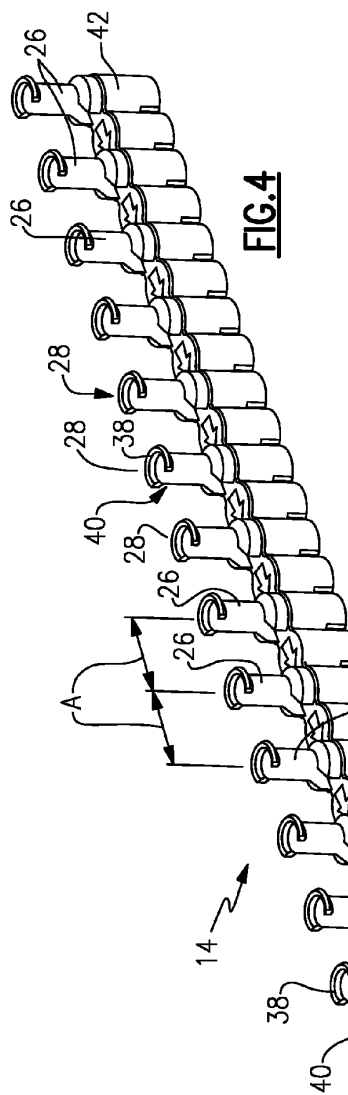


FIG. 4

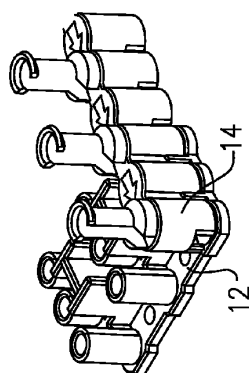


FIG. 5B

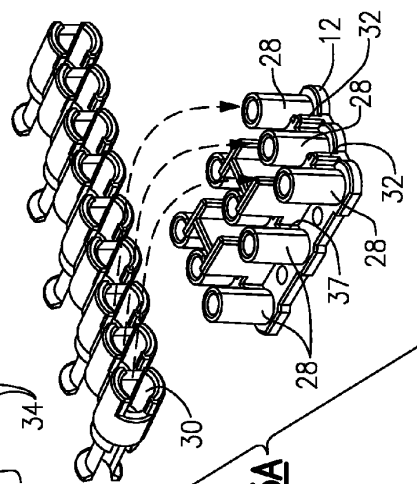


FIG. 5A

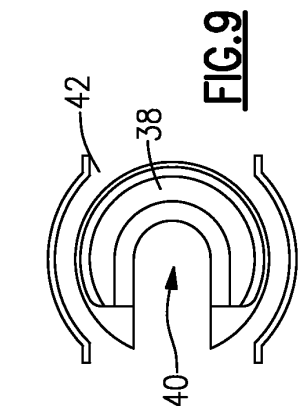


FIG. 9

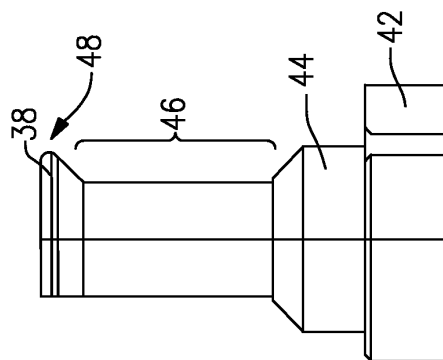


FIG. 8

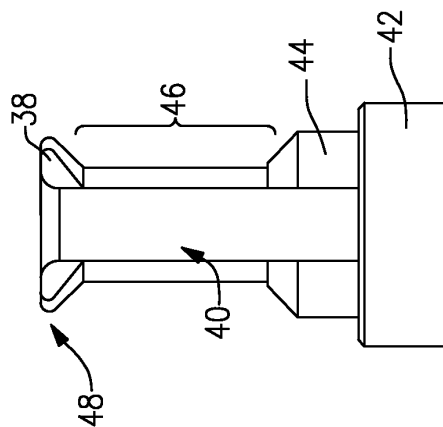


FIG. 7

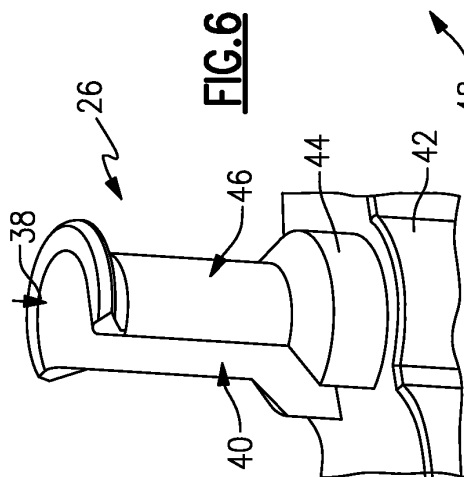
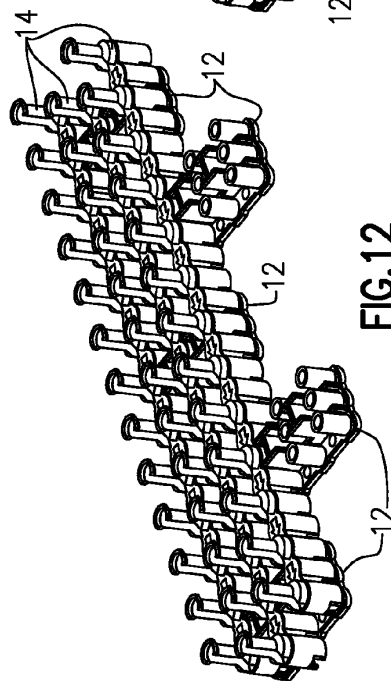
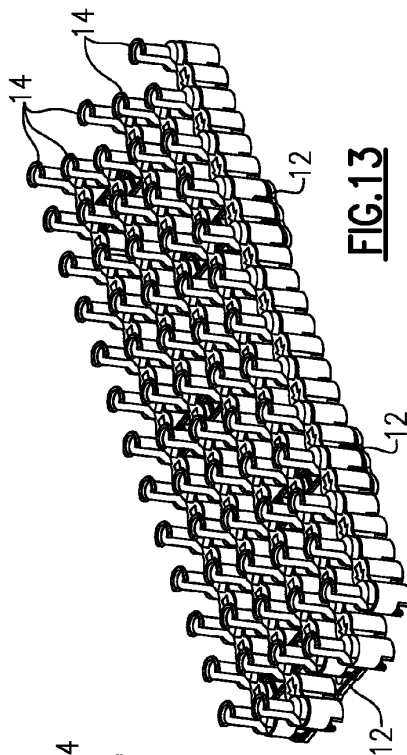
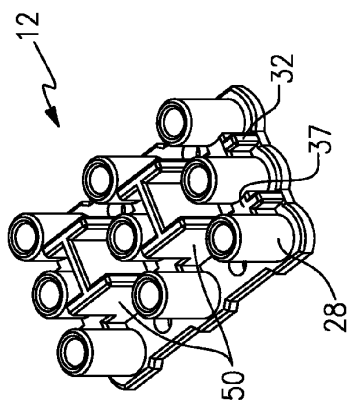
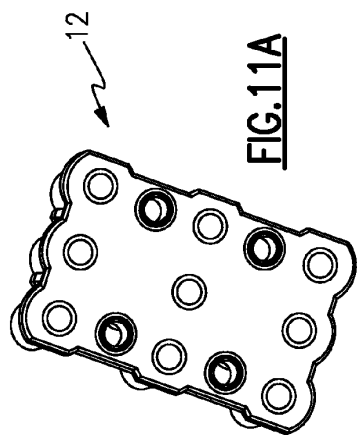


FIG. 6



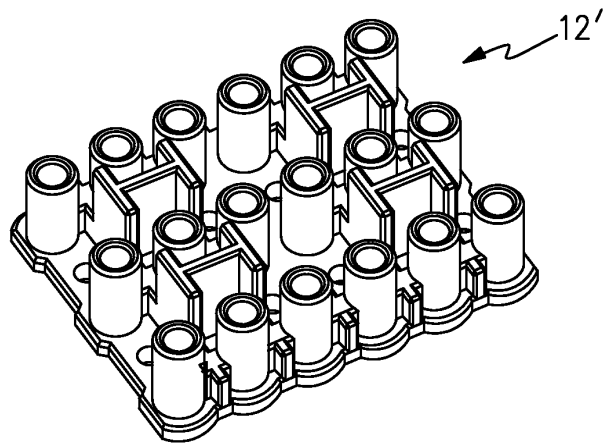


FIG. 10B

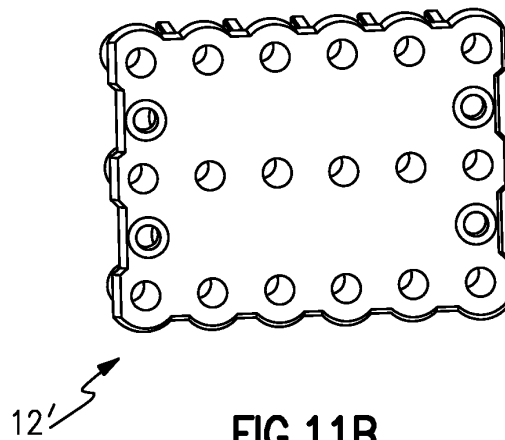


FIG. 11B

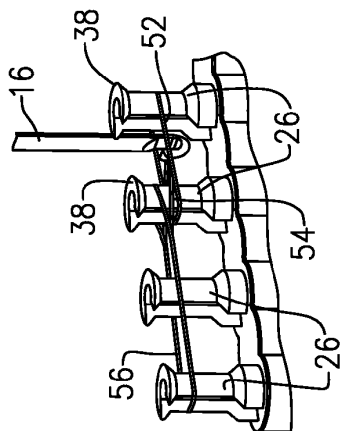


FIG. 14C

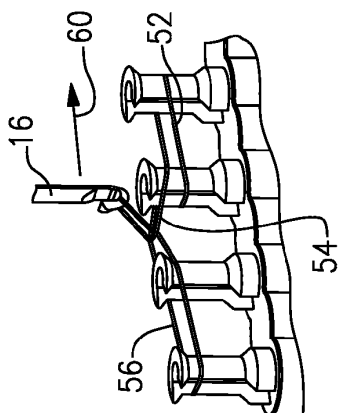


FIG. 14B

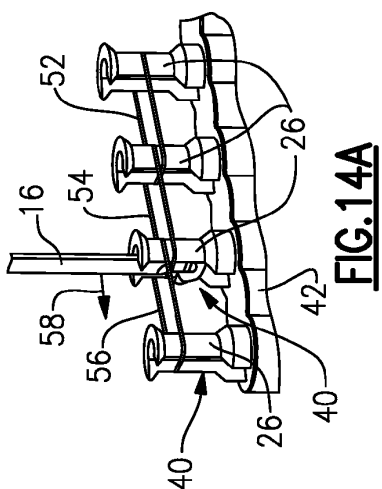
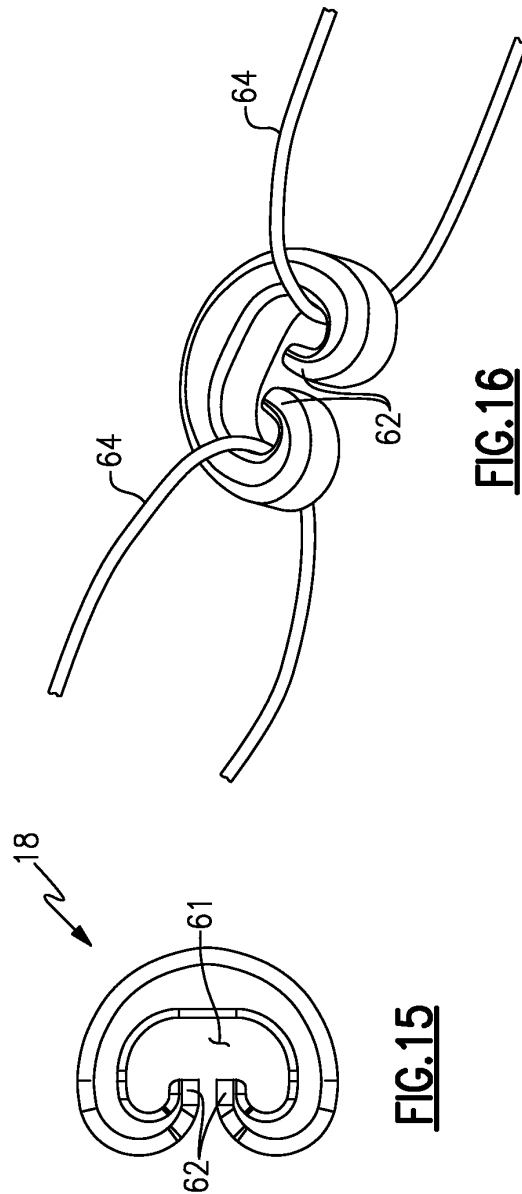


FIG. 14A



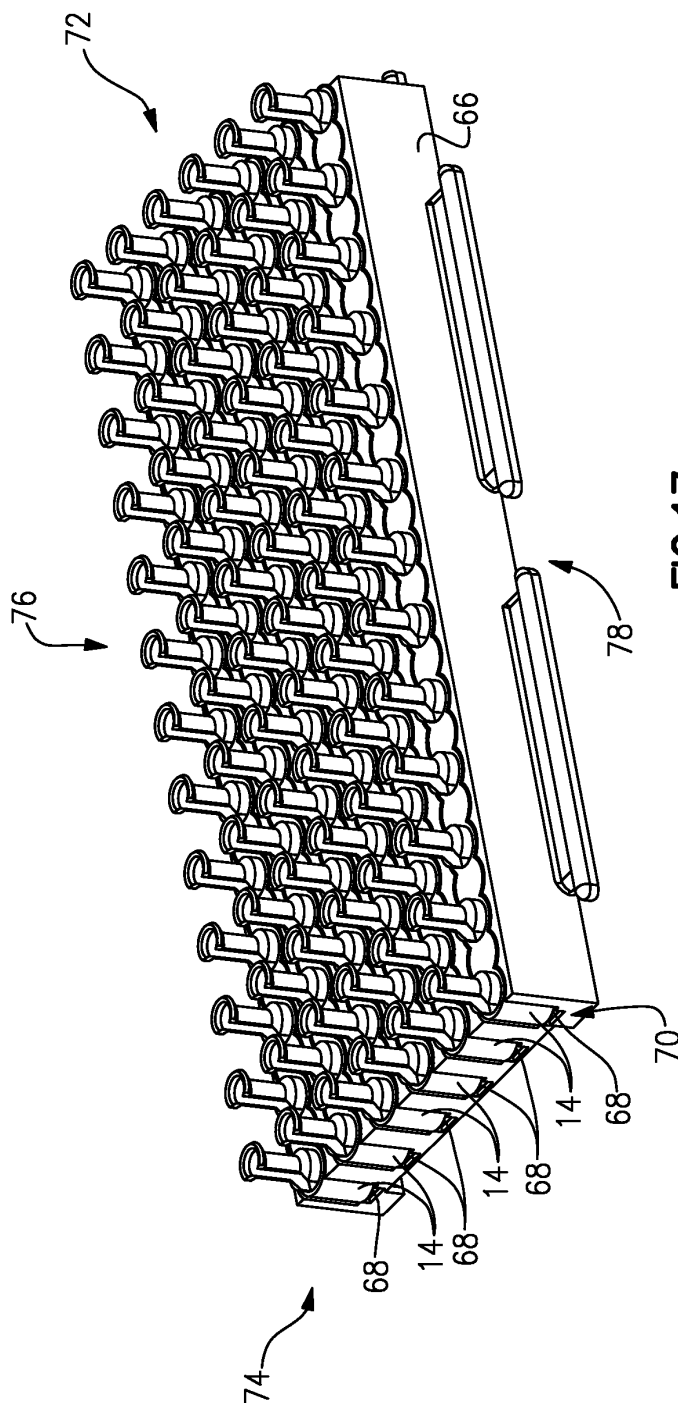
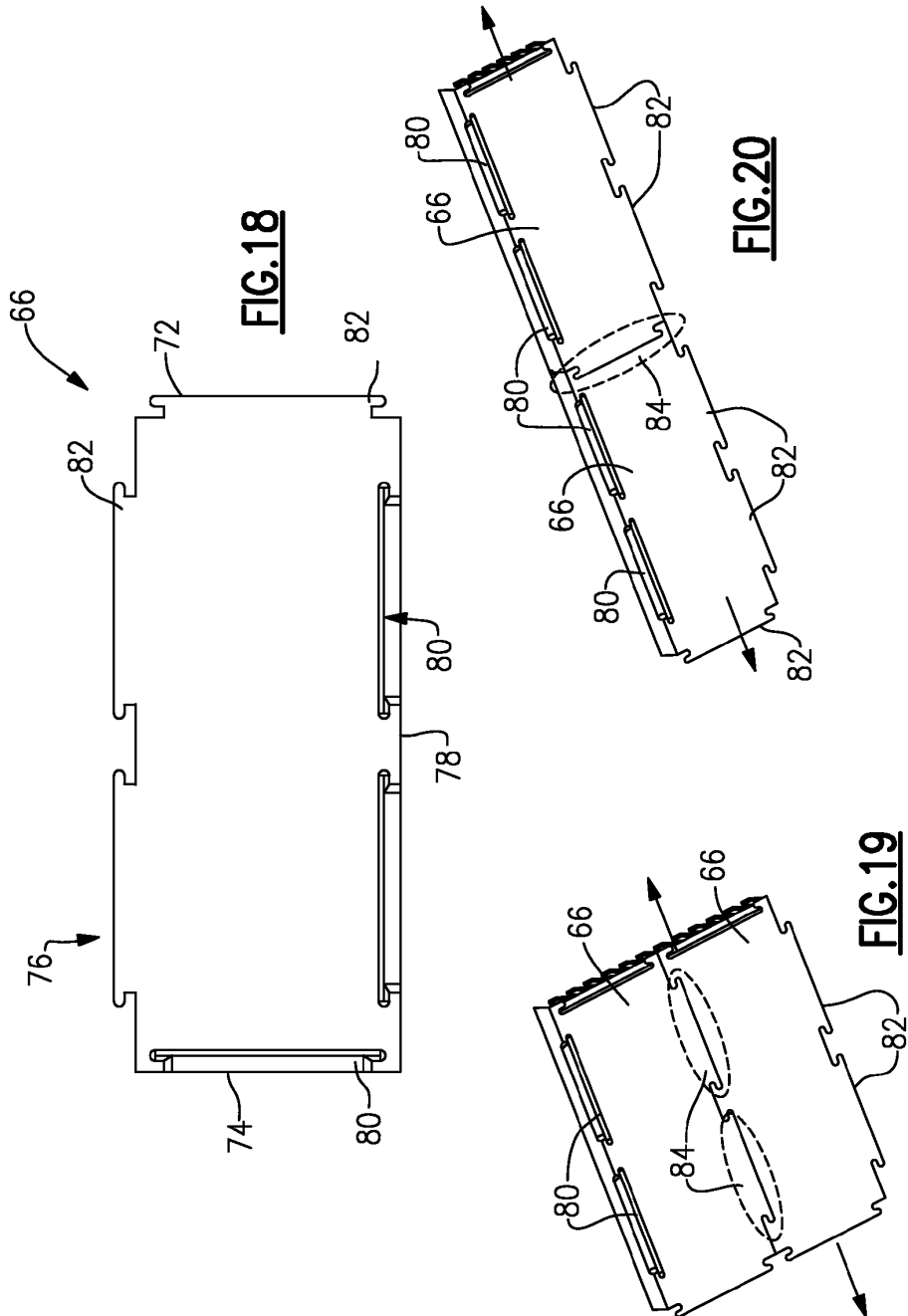


FIG. 17



BRUNNIAN LINK MAKING DEVICE AND KIT

REFERENCE TO RELATED APPLICATION

This application claims priority to U.S. Provisional Appli- 5
cation No. 61/410,399 filed on Nov. 5, 2010.

BACKGROUND

This disclosure generally relates to method and device for 10
creating a linked item. More particularly, this disclosure
relates to a method and device for creating a linked wearable
item from elastic bands.

Kits that include materials for making a uniquely colored 15
bracelet or necklace have always enjoyed some popularity.
However such kits usually just include the raw materials such
as different colored threads and beads and rely on the indi-
vidual's skill and talent to construct a usable and desirable
item. Accordingly there is a need and desire for a kit that
provides not only the materials for creating a unique wearable 20
item, but also that simplifies construction to make it easy for
people of many skill and artistic levels to successfully create
a desirable and durable wearable item.

SUMMARY

A Brunnian link is a link formed from a closed loop 25
doubled over itself to capture another closed loop to form a
chain. Elastic bands can be utilized to form such links in a
desired manner. The example kit and device provides for
creation of Brunnian link articles of complex configurations.
Moreover, the example kit provides for the successful creation
of unique wearable articles using Brunnian link assembly
techniques.

The example kit includes several pin bars that are sup- 35
ported in a desired spatial orientation by at least one base. The
desired spatial orientation is dependent on the desired link
configuration of the completed article. The base and pin bars
may be assembled in various combination and orientations to
provide endless variation of completed link orientations. 40
Moreover, additional bases and pin bars can be added to
further expand possible completed article creation.

Each of the pin bars includes a flanged top portion for 45
holding elastic bands in place and a front access groove. The
front access groove provides for a hook to be inserted below
a top most elastic band such that a lower band can be grasped
and pulled over an adjacent band to form the Brunnian link.
The disclosed kit provides for many possible orientations of
adjacent pins, and therefore different orientations of and
designs for a completed linked article.

These and other features disclosed herein can be best 50
understood from the following specification and drawings,
the following of which is a brief description.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an example kit for creating
a Brunnian link article.

FIG. 2 is schematic view of Brunnian link articles.

FIG. 3 is a schematic view of a series of Brunnian links.

FIG. 4 is a perspective view of an example pin bar.

FIG. 5A is a perspective view of interfacing surfaces of an
example base and the example pin bar.

FIG. 5B is a perspective view of a pin bar mounted to an
example base.

FIG. 6 is a perspective view of one pin of the example pin
bar.

FIG. 7 is front view of one example pin.

FIG. 8 is side view of an example pin.

FIG. 9 is a top view of an example pin.

FIG. 10A is a perspective view of an example base.

FIG. 10B is a perspective view of another example base.

FIG. 11A is a bottom view of the example base.

FIG. 11B is a bottom view of another example base.

FIG. 12 is an assembly view of several bases assembled to
several pin bars.

FIG. 13 is an assembly view of several pin bars mounted
relative to each other in one desired special orientation.

FIGS. 14A-C are perspective views of assembly steps for
creating a Brunnian linked article.

FIG. 15 is a plan view of an example clip for securing loose
ends of a Brunnian linked article.

FIG. 16 is perspective view illustrating elastic bands
secured with the example clip.

FIG. 17 is a perspective view of an example base template
for holding pin bars in a desired special orientation.

FIG. 18 is a bottom view of the example base template.

FIG. 19 is a perspective view of side by side attachment of
two base templates.

FIG. 20 is a perspective view of an end to end attachment of
two base templates.

DETAILED DESCRIPTION

Referring to FIG. 1, an example kit is indicated at 10 for
creating Brunnian link items such as bracelets, necklaces and
other wearable or decorative items shown in FIG. 2.

Referring to FIG. 3, a Brunnian link 20 is formed from a
continuous looped structure without forming an actual knot.
Several links are formed in a chain to form a circular struc-
ture. The ends are then secured and a durable wearable item
is created. In this example three closed looped elastic items 20
such as rubber bands are shown forming a single chain. Each
link is formed by capturing ends 22 of one loop structure with
a mid portion 24 of another loop structure in series. Each link
depends on the previous and subsequent links to maintain the
desired shape and integrity. Removing one link 20 results in
all of the links becoming loose from each other.

Referring to FIG. 1, the example kit 10 includes a base 12
that supports pin bars 14 that each includes a plurality of pins
26. A hook tool 16 is included for grasping and moving bands
from one pin 26 to another. A clip 18 receives ends of the
completed links to complete and secure the linked item. One
or several pin bars 14 are mounted to several bases 12 as is
shown to support the pin bars 14 and the corresponding pins
26 in a desired alignment. In this example, a center pin bar 14
is incremented one up from the two outermost pin bars 14.
This alignment provides for creation of a desired linked item.
In this example three bases 12 are utilized to support the pin
bars 14 in a desired relative orientation.

Referring to FIGS. 4, 5A-B, with continued reference to
FIG. 1, the base 12 includes a plurality of upward extending
cylinders 28 that are received within a corresponding opening
30 defined at the bottom of each pin 26 the pin bar 14. The
cylinders 28 of the base 12 and the openings 30 receiving the
cylinders 28 are mating features that define a slight interfe-
rence fit to hold the pin bar 14 in place. Although three bases
12 are shown in this example, more or less could be utilized to
support additional numbers of pin bars 14.

The base 12 includes tabs 32 disposed between the cylin-
ders 28 that fit within corresponding slots 34 defined on the
pin bar 14. The interface between the tabs 32 and slots 34
provide alignment and maintain the upright orientation of the
pin bars 14. Each of the pins 26 includes a front slot 36 that

3

receives a boss 38 defined between cylinders 28 of the base 12. The front slot 34 and boss 38 interface further aligns and supports the pin bar 14 on the base 12.

The pin bar 14 is an integral structure having the plurality of pins 28 defined in a single row. Each of the pins 28 are spaced an equal distance A apart. Each of the pins 28 includes a flanged top 38 and a front access groove 40.

Referring to FIGS. 6, 7, 8 and 9, each pin 26 extends upward from a bar portion 42 and include features for holding and spacing rubber bands. Each pin 26 includes the flanged top 38 that is flared outward to prevent errant release of a rubber band during creation of a link. The access groove 40 is a longitudinal groove that extends inward toward a center of the pin 26. The access groove 40 extends from the bar portion 42 to an open end with the flanged top 38. The groove 40 provides a clearance for insertion of the hook tool 16 (FIG. 1) utilized for moving ends of a rubber band between pins 32.

Each of the pins 26 includes a bottom portion 44 that is flared outward from a diameter of a mid portion 46. The mid portion 46 of the pin 26 is where a rubber band is secured during assembly. The bottom portion 44 is flared outward to prevent the rubber band from slipping downward against the bar portion 42. The top and bottom flared portions 38, 44 centers the rubber bands in the mid portion 46 to provide a desired alignment during assembly. The edges of the flange 38 are rounded over to eliminate sharp edges or surfaces.

Referring to FIGS. 10A and 11A, the example base 12 includes three rows of three cylinders 28 that are spaced equal distance from each other. The tabs 32 and bosses 37 are received within corresponding slots 34 and 36 formed on the pin bar 14. A stabilizer 50 is disposed between each row of cylinders 28 to provide further lateral support for the pin bars 14.

Referring to FIGS. 10B and 11B, another example base 12' includes a three row of six cylinders 28 that are spaced an equal distance from each other. The additional cylinders 28 provided by the larger example base 12' provide for mounting of additional pin bars 14 with the same number of bases 12'. As appreciated, it is within the contemplation of this disclosure to provide a base with any number of rows of and columns of cylinders 28 that provide varying mounting configurations for the pin bars 14.

Referring to FIGS. 12 and 14, the base 12 is utilized to set a desired pattern and uniform spacing between several pin bars 14. Accordingly, each of the bases 12 can engage one or several pin bars 14. The base 12 can engage and receive three pin bars 14 longitudinally, and/or may be added to a side of a group of pin bars to add additional pin bars beyond the three provided for by one base 12. FIG. 12 illustrates a configuration where three bases are supporting three pin bars 14 and two additional bases 12 are engaged to the current pin bars 14 with only one row such that two rows of cylinders 28 extend laterally to receive additional pin bars 14. FIG. 13 illustrates a configuration where five pin bars 14 are aligned side by side as provided by the additional bases 12 extending laterally as shown in FIG. 12. As is appreciated, the extent to which additional bases and pin bars 14 can be added and the configurations possible are limited only by the desire of the user of the disclosed kit. The addition of pin bars 14 provides for more unique and intricate designs limited only by the imagination of the user of the kit.

Referring to FIGS. 14A-C, a method of forming a Brunnian link as provided by the example kit includes the initial step of loading elastic bands onto adjacent pins 26. In this example, beginning at the right most ends each rubber band are stretched over adjacent pins and held at the mid portion. A first elastic band 52 is placed between a first pair of adjacent

4

pins 26 A second elastic band 54 is then placed over one end of the previously assembled first elastic band 52, and then a third elastic band 56 and so on until the desired number of rubber bands have been placed on corresponding pin bars 14. Note that in these example only three elastic bands 52, 54, and 56 are shown for explanation purposes, however, in practice, many elastic bands would be utilized to provide the desired length of a completed article.

Once the elastic bands 52, 54, and 56 are placed on each of the pins 26, the hook 16 is inserted into the access groove 40 and moved downward past the top most elastic bands 56. The hook 16 is then moved outward from the groove in a direction indicated by arrow 58 a sufficient distance to allow for one end of the elastic band 54 to be caught in the hook end. Further lifting pulls the captured end of the second elastic band 54 in the direction indicated by 60 up through the end of the third elastic band 56 for assembly on to another adjacent pin 26 as is shown in FIG. 14B. The captured end is pulled up and over the flanged top 38 and pulled back onto the adjacent pin to form a single link. The captured end of the elastic band 54 is then released to engage the adjacent pin 26. This process is repeated until a chain of links a desired length is obtained.

The example illustrated in FIGS. 14A, 14B and 14C illustrate a chain formed from a single row of links. The example base template 12 can be arranged to support many pin bars 14 and therefore links can be formed longitudinally and laterally across adjacent pin bar 14 to form a wide variety of link configurations and combinations.

Referring to FIGS. 15 and 16, once the link is created, the clip 18 is used to secure the ends such that the fabricated chain of links does not come undone. The clip 18 is substantially C-shaped with an inward facing ends 62 that trap ends of the elastic bands 64 within the inner area 61.

Referring to FIGS. 17-20, an example base template 66 is shown for holding six pin bars 14 in a desired orientation. Each of the example pin bars 14 includes the opening 30 of a defined size and the base template 66 includes a plurality of circular bosses 68 that are sized to provide a desired tight interference fit with the openings 30 in the pin bar 14 such that the pin bar 14 is retained in place within grooves 70 of the base template 66. The interference fit between the pin bar 14 and the bosses of the base template 66 assure a positive mounting and securing of to the base to prevent separation during use and construction of a desired wearable item.

Referring to FIGS. 18, 19 and 20, the base template 66 includes first and second ends 72, 74 and first and second sides 76, 78 between the first and second ends 72, 74. The first end 72 includes a male joint 80 and the second end 74 includes a corresponding female joint 80. The first side 76 includes a male joint 82 and the second side 78 includes a female joint 80. The alternating sides provide for attachment of several base templates 66 to each other to provide extended capability.

FIG. 19 illustrates two base templates 66 connected to each other in a side-to-side configuration by way of joints 84. FIG. 20 illustrates two base templates 66 connected to each other in an end-to-end configuration by way of joint 84. As appreciated, any number of base templates 66 can be secured to each other to form many different desired configurations. The different configurations provide for many options for creating different shapes and configurations of wearable items.

Accordingly, the example kit and method provide for the creation of many different combinations and configurations of Brunnian links for the creation of bracelets, necklaces, and other wearable items. Moreover, the example kit is expandable to further create and expand the capabilities of potential Brunnian link creations. Further, the example kit provides for

5

the creation of such links and items in an easy manner allowing persons of varying skill levels to be successful in creating unique wearable items.

Although an example embodiment has been disclosed, a worker of ordinary skill in this art would recognize that certain modifications would come within the scope of this disclosure. For that reason, the following claims should be studied to determine the scope and content of this invention.

What is claimed is:

1. A kit for creating an item consisting of a series of links, the device comprising:
a base; and

at least one pin bar supported on the base, the pin bar including a plurality of pins each including a top flared portion for holding a link in a desired orientation and an opening on a front side of each of the plurality of pins.

2. The kit as recited in claim 1, wherein the pin bar and the base including corresponding mating features for securing the pin bar to the base.

3. The kit as recited in claim 2, wherein the base includes a plurality of mating structures receivable within a mounting opening defined within each of the plurality of pins with an interface between each of the mating structures and mounting openings defining an interference fit.

4. The kit as recited in claim 3, wherein each of the mating structures comprises upright extending cylinders and the mounting openings are round to receive a corresponding one of the cylinders.

5. The kit as recited in claim 1, wherein each of the plurality of pins includes a bottom flared portion spaced apart from the top flared portion and a mid portion for holding a link.

6. The kit as recited in claim 1, wherein the base comprises a plurality of bases for securing a plurality of pin bars in a desired relative special orientation for forming the series of links in a desired pattern.

7. The kit as recited in claim 6, wherein the base comprises a key and each of the plurality of pin bars includes a corresponding slot for aligning each of the plurality of pin bars relative to the base and to others of the plurality of pin bars.

8. The kit as recited in claim 1, including a hook adapted to extend into the access groove for capturing one end of a link.

6

9. The kit as recited in claim 1, including a clip for securing ends of the series of links together.

10. The kit as recited in claim 1, wherein the series of links comprises a series of elastic bands.

11. The kit as recited in claim 1, wherein the series of links comprise a series of Brunnian links.

12. A method of creating a linked item comprising the steps of:

supporting at least one pin bar including a plurality of pins to a base to define a desired relative special relationship between at least two adjacent pins;

assembling at least two elastic bands across adjacent pins; capturing one end of an elastic band and pulling the end over and onto an adjacent pin while engaged with another elastic band; and

capturing and pulling subsequent ends over until a desired link length and configuration is obtained.

13. The method as recited in claim 12, wherein a second of the at least two elastic bands is placed atop one end of the first of the at least two elastic bands on a common pin.

14. The method as recited in claim 13, wherein capturing one end of the elastic band includes using a hook tool reaching into an access groove of the pin to extend below the top most elastic band and grasp a bottom elastic band with the hook tool.

15. The method as recited in claim 12, including assembling a plurality of pin bars to a base to provide parallel rows of pins.

16. The method as recited in claim 15, including the step of assembling the plurality of pin bars to a corresponding plurality of bases to define a desired pattern of pins.

17. The method as recited in claim 15, including assembling a plurality elastic bands in a desired pattern to the plurality of pin bars including at least one elastic band that extends between pins of another pin bar.

18. The method as recited in claim 15, including the step of inserting ends of the elastic bands into a clip to form the linked item.

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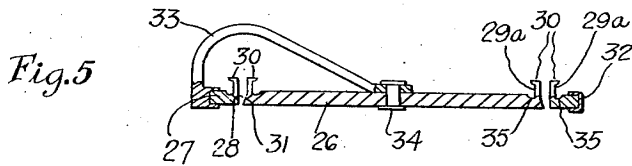
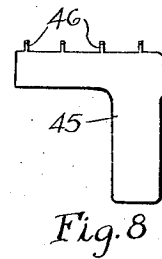
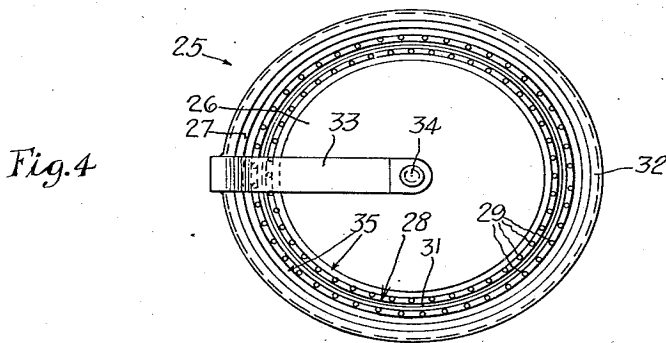
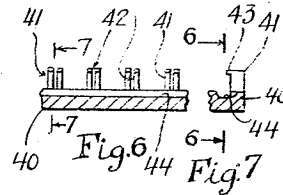
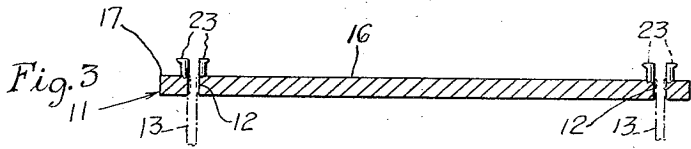
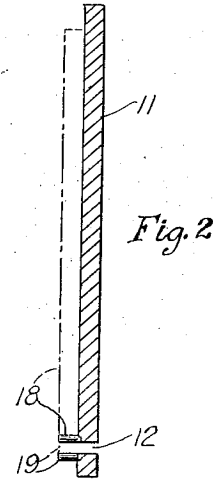
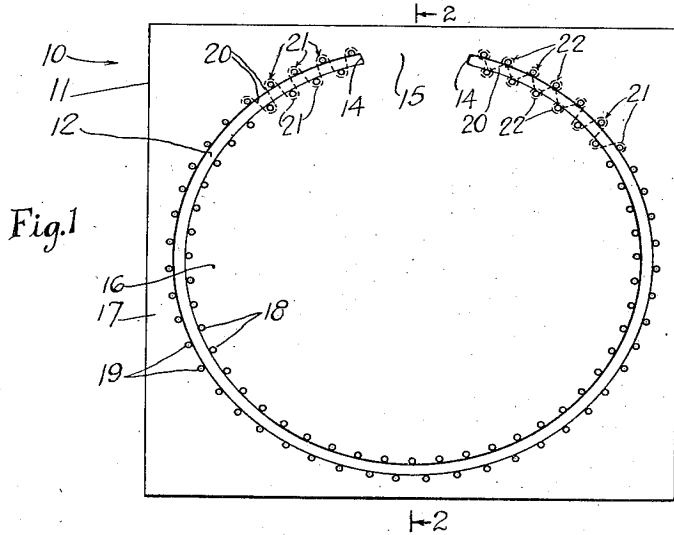
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HAND KNITTING DEVICE

Filed March 18, 1947



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HAND KNITTING DEVICE

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8 Claims. (Cl. 66—4)

1

This invention relates to improvements in the art of knitting garments, fabrics, and other articles.

One object of the invention is to provide a simple and inexpensive device of a portable character having improved means for holding a series of loops that are to be cast off to furnish stitches to produce an article or a fabric.

Another object of the invention is to furnish a device of the nature set forth which is particularly adapted to be used by children and adults, particularly those suffering from various disabilities. The device may accordingly also be used to teach the art of knitting.

Another object of the invention is the provision of improved means whereby knitting can be performed with greater accuracy and uniformity than heretofore, and without likelihood of accidental dropping of stitches.

Another object of the invention is to provide improvements in the art for improved knitting of materials of special shape, such as angular or tubular formations to permit the production of a wide range of articles with greater ease and with less likelihood of error than heretofore.

Another object of the invention is to furnish an improved device which may be made so small as to be readily carried in a lady's handbag, and which permits the production of knitted fabrics having a substantial degree of density.

Other objects and advantages of the invention will become apparent as the specification proceeds.

With the aforesaid objects in view, the invention comprises the novel features, combinations and arrangements of parts hereinafter described in their preferred embodiments, pointed out in the subjoined claims, and illustrated in the annexed drawing, wherein like parts are designated by the same reference characters throughout the several views.

In the drawing:

Figure 1 is a plan view of a device embodying the invention, showing in dot-dash lines certain steps in knitting an article in accordance with my improved methods.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1 with certain parts indicated in dot-dash lines.

Fig. 3 is a cross section of the device and showing in dot-dash lines the fabric produced thereby, with pins modified to provide heads.

Fig. 4 is a plan view of a modification for knitting a tubular article.

Fig. 5 is a transverse section thereof.

2

Fig. 6 is a fragmentary section of a modification on line 6—6 of Fig. 7.

Fig. 7 is a section on line 7—7 of Fig. 6.

Fig. 8 is a fragmentary view of a loop casting tool.

The advantages of the invention as here outlined are best realized when all of its features and instrumentalities are combined, but useful embodiments may be produced involving less than the whole.

It will be obvious to those skilled in the art to which the invention appertains, that the same may be incorporated in several different constructions. The accompanying drawing, therefore, is submitted merely as showing a preferred exemplification of the invention.

Referring in detail to the drawing, 10 denotes a device embodying the invention. The same may include a member 11 which may be in the nature of a plate of metal, plastic, or other suitable material, of any desired configuration and size. This member is formed with a slot or opening 12 therethrough providing a narrow passageway for a fabric 13 that is knitted on the device. For compactness, the passage 12 is of generally circular form, although it may be of other shapes, and may follow a spiral or zig-zag path. The passage 12 has its ends 14 in proximity to each other to define a neck 15, the latter integrally interconnecting the inner and outer sections 16 and 17 of the member 11.

Carried by each of the sections 16 and 17 are the respective series of upstanding pin-like projections or elements 18 and 19. Each of these series extends longitudinally of the passage 12, with the elements thereof closely adjacent thereto and preferably flush with the adjacent edges of the passage 12. While the elements 18 and 19 may consist of nails driven into the member 11, it is preferred to mold them integral with the member 11, thus obtaining the added advantage of permitting these elements to lie at the very edges of the passage 12. All of the elements are generally parallel to each other and to the passage 12. The elements 18 are equally spaced along the passage 12, and this also applies to the elements 19, the spacing of the latter being slightly greater than that of the elements 18 because of the difference of radius involved in the circular arrangement of the passage 12. Preferably the elements 18 and 19 are in staggered relation to each other, this being particularly desirable to facilitate the knitting of a fabric, in view of the fact that the passage 12 is so narrow as to only snugly pass the fabric

LaRose Exh. 1006, p. 2

3

13, and the elements 18 and 19 being thus in relatively close proximity to each other to permit the production of a fabric which will not be loose in texture and will have a required degree of density. The different elements 18 and 19 may be headed as shown in Fig. 3 or in any other suitable manner.

In use, the operator utilizes a yarn 20 by passing the same back and forth between the elements 18 and 19 and across the passage 12 to thus form the loops 21. This looping arrangement may be of any desired form or character. Thus the yarn may be wound around each of the elements to completely encircle the same. Other arrangements will be apparent to those skilled in the art. Floats may be provided where required, to produce various design effects. To form a float it is merely necessary that the yarn 20 shall pass continuously along the outside of two or more of the elements 18 or 19 before it is again passed back and forth between opposed elements across the passage 12. In beginning the knitting of a garment or fabric, the yarn 20 is then caused to follow a reverse path, but in the identical manner described, thus providing two courses of the loops 21 on each element 18 and 19. Now the operator successfully grasps the loops of the lower course with a suitable hook or pointed instrument and lifts the same and casts it over the respective pin element in a direction toward the passage 12, thus producing a stitch 22 herein conventionally shown and being of any suitable type well known in the art. After stitches have thus been formed throughout the knitting path, the operator again manipulates the yarn to form another course of the loops 21 and then casts over the loops of the next preceding course to form another course of stitches 22. By continuing in this manner, a fabric 13 is produced which is fed downwardly through the passage 12. If it be desired to knit an angular article, as for example in making a stocking, the knitting may proceed along any suitable part of the path of knitting furnished by a device 10, and after a given number of courses have been made, the knitting may continue along a smaller or larger part of said path, thus producing an article having portions of different widths. The final stitches along any course may be caught, tacked, or stitched in any suitable manner to prevent unraveling. Numerals may be placed along the elements 18 or 19 for the guidance of the knitter. It is thus seen that I have provided a novel method of knitting which fulfills various objects of the invention.

The device 10 may be produced as a one-piece molded article, and the heads 23 of the pins 18 and 19 can also be molded, or these pins may be produced straight as in Figs. 1 and 2 after which the ends of the pins may be upset to produce the heads. If the device is made of plastic, a suitable platen may be applied in heated condition to form heads 23. The heads herein shown project outwardly from the center of the device for the pins 18 and inwardly for the pins 19.

In Figs. 4 and 5 are shown modifications of the invention to furnish a device 25 for the knitting of a tubular article. This device comprises a disc member 26 and a ring member 27 extending therearound to furnish a continuous intervening annular passage 28 for the fabric 13. Pin elements 29 may be provided according to the same principle as those at 18 or 19, and these elements may be modified as shown at 29a to furnish the heads 30 like those at 23. One face 31 of the passage

4

28 may be angular to slightly constrict the passage to frictionally grip the fabric. Journaled on the ring member 27 is a circular channeled track 32 to which is connected an arm 33 which is centrally rotatably connected by a rivet 34 to the disc member 26. This arm 33 may consist of resilient material so that if the member 26 is pressed downwardly, the passage 28 is expanded for free movement of the fabric 13. Adjacent to the pin elements 29 are the grooves 35 so arranged as to facilitate the entering of a hook or pointed instrument under the yarn loops to raise them and cast them over to form stitches.

The device 25 is employed for knitting in the identical manner above described except that the yarn 20 follows a circularly continuous path. The arm 33 will not cause any obstruction in forming the loops 21 or the stitches 22 because this arm may be angularly moved out of the way since it is rotatable with respect to the inner and outer members 26 and 27. The loops 21 serve to interconnect members 26 and 27 against any relative angular movement, and the arm 33 holds these members in a common plane with the fabric 13 gripped in the passage 28 at the inclined face 31. Thus there is little or no opportunity for the fabric to shift upwardly and permit the loops or stitches to accidentally leave the pins. When a course of knitting has been completed, the fabric 13 may merely be pulled downwardly, with the member 26 yielding because of the resilient arm 33, and this may be assisted by a slight downward pressure on the member 26 causing expansion of the passage 28. The grooves 35 substantially facilitate the ease and rapidity with which the loops may be cast over to form the stitches. These grooves may be employed in the device of Figs. 1 to 3 as if specifically shown therein.

In Figs. 6 and 7 is shown a modification which may be regarded as incorporated in devices 10 and 25 and differs therefrom principally in that the pins such as 18, 19 and 29 are slotted for easier engagement by a hook for casting off the loop 21 to form stitches 22. Thus a plate 40 such as at 16, 26, or 27 is formed with pins 41 vertically centrally slotted at 42 in such a direction as to facilitate entrance of a hook. These pins may be headed at 43 like those at 23, 30. The well 44, like the grooves 35, permits entrance of the hooks into the well and thence into the guide slots. The well may extend partially into the space between the tooth sections formed by the open ended guide slots 42.

A tool 45 may have a series of casting off angular hooks 46 so narrow and so placed as to be adapted to simultaneously enter in the well and guide slots to engage and cast off the loops. The row of hooks 46 may be of any desired length and shape, and if the rows of pins such as 41 are in straight lines, the row of hooks may be a yard long or more for manual or machine operation.

I claim:

1. A device for the knitting of a fabric including a one-piece plate-like member having a narrow slot opening extending along a generally curved path whose ends are spaced from each other to define a neck integrally interconnecting the plate portion within the slot with the plate portion beyond the slot, and a series of equally spaced pin-like elements on each section closely adjacent to said opening, the spacing between the elements of one section being approximately equal to those of the other section, and said spacing being such that the fabric is knitted by looping yarn around the elements for stitch

5

forming to produce a fabric passing through said opening.

2. A device according to claim 1 wherein the elements are integral with the member and lie flush with the adjacent edges of the opening.

3. A device according to claim 1 wherein the elements are integral with the member and lie at the very edges of the opening, and the elements being headed to releasably retain the yarn loops.

4. A device for the knitting of a fabric comprising a member having a plurality of sections having therebetween a narrow elongated passage for the fabric, a series of upstanding pin-like elements closely adjacent to and extending along the passage for the looping of a yarn around the elements for the subsequent casting over of stitches to produce the fabric, one section providing a side face for the passage, and means resiliently interengaging the sections for relative movement therebetween to constrict the passage to releasably grip the fabric therein.

5. A device for the knitting of a tubular fabric including a disc member, a ring member around the same and spaced therefrom to furnish a continuous annular passage for the fabric, a circular element rotatably mounted on the ring member, means connected to the element and rotatably connected to the other member to maintain the members in operative relation to each other while permitting rotary movement of said means with respect to the members, and a series of pin-like elements on each member extending along and closely adjacent to the passage for the looping of a yarn around the pin-like elements, across the passage, for subsequent stitching to produce the fabric.

6. A device comprising a supporting member, a series of pins about which a yarn is to be looped for subsequent casting off to knit a fabric mounted along an edge of said member, said pins having longitudinal slots to provide guides for hooks used in the casting off of the loops, said supporting member being formed with a well extending parallel to said edge at the base of the

6

pins, said slots extending into said well to form a continuous passage for the hooks.

7. A device comprising a supporting member, a series of pins about which a yarn is to be looped for subsequent casting off to knit a fabric mounted along an edge of said member, said pins having longitudinal slots to provide guides for hooks used in the casting off of the loops, said slots extending the entire length of the pin to permit free passage of the hooks.

8. A device for the knitting of a tubular fabric including a disc member, a ring member around the same and spaced therefrom to furnish a continuous annular passage for the fabric, a series of upstanding pin-like elements mounted on said disc member and ring member, said elements being closely adjacent to and extending along said passage for the looping of a yarn around the elements for the subsequent casting over of stitches to produce the fabric, and means slidably connected to the ring member and rotatably connected to said disc member to maintain the members in operative relation to each other while permitting rotary movement of said means with respect to the members.

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Macbain

[11] **Patent Number:** **5,231,742**
[45] **Date of Patent:** **Aug. 3, 1993**

- [54] **HAND TWINING LOOMS**
- [76] **Inventor:** **Kathleen E. Macbain**, 9125 Copper NE, Apt. 320, Albuquerque, N. Mex.
- [21] **Appl. No.:** **895,521**
- [22] **Filed:** **Jun. 8, 1992**
- [51] **Int. Cl.⁵** **D03D 29/00**
- [52] **U.S. Cl.** **28/151; 139/34**
- [58] **Field of Search** **289/16.5, 17; 139/383 AA, 29, 34; 66/1 A, 1 S, 2, 3, 193, 169 R, 1 R, 117, 118; 28/144, 145, 147, 149, 152, 151, 150; 223/6, 120; 87/10-13, 53, 62**

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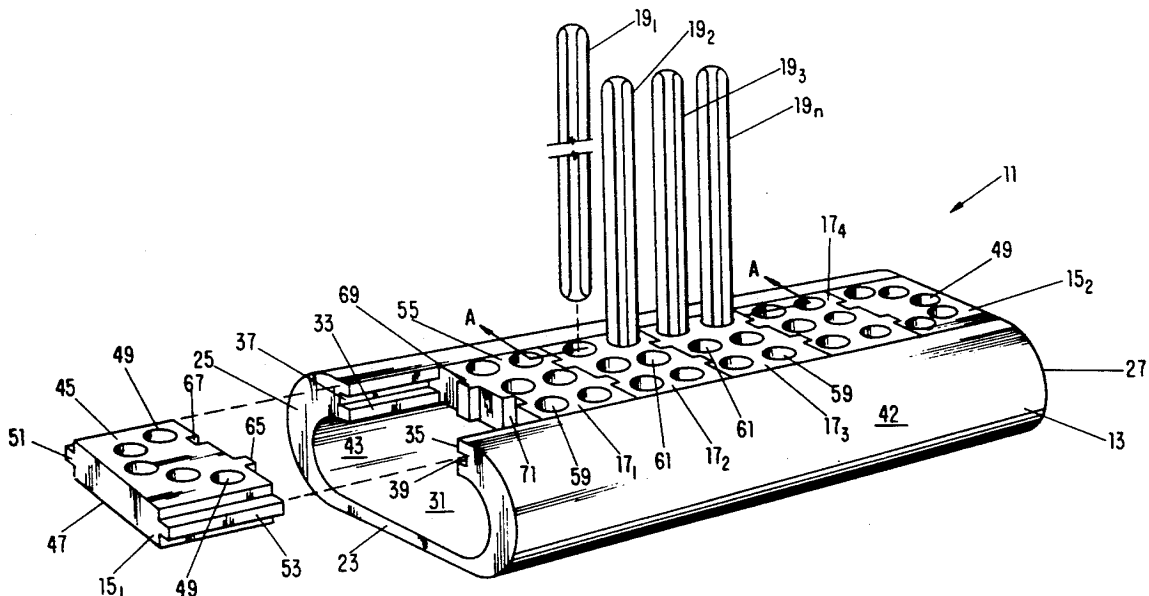
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- 2,224,563 12/1940 Clark .
- 2,463,365 3/1949 Epstein 139/34
- 2,803,051 8/1957 Gutzmann .
- 3,530,558 9/1970 Gick .
- 3,739,437 6/1973 Alberici et al. .
- 3,971,417 7/1976 Gentil .
- 4,192,046 3/1980 van den Bosch-Meevis et al. .

FOREIGN PATENT DOCUMENTS
1003305 1/1977 Canada .

[57] **ABSTRACT**

An apparatus and method for twining or weaving. The apparatus includes a plurality of elongated loom fingers and a loom. Each of the loom fingers is elongated, has first and second symmetrical tapered ends, and has an elongated groove running the entire length thereof. The loom includes: a first support that includes at least one plate-like member having a plurality of through holes therein which loosely support the loom fingers in a substantially parallel manner; a second support that has a finger engagement surface which, in the assembled form, is adopted to engage one of the ends of each loom finger being used; and structure for detachably supporting the plate-like member altitudinally with respect to the second support. In operation, to disengage the loom fingers, the plate-like member is moved relative to the second support and, then, the plate-like member is moved toward the end of the loom fingers which had previously been in contact with the finger engagement surface.

25 Claims, 10 Drawing Sheets



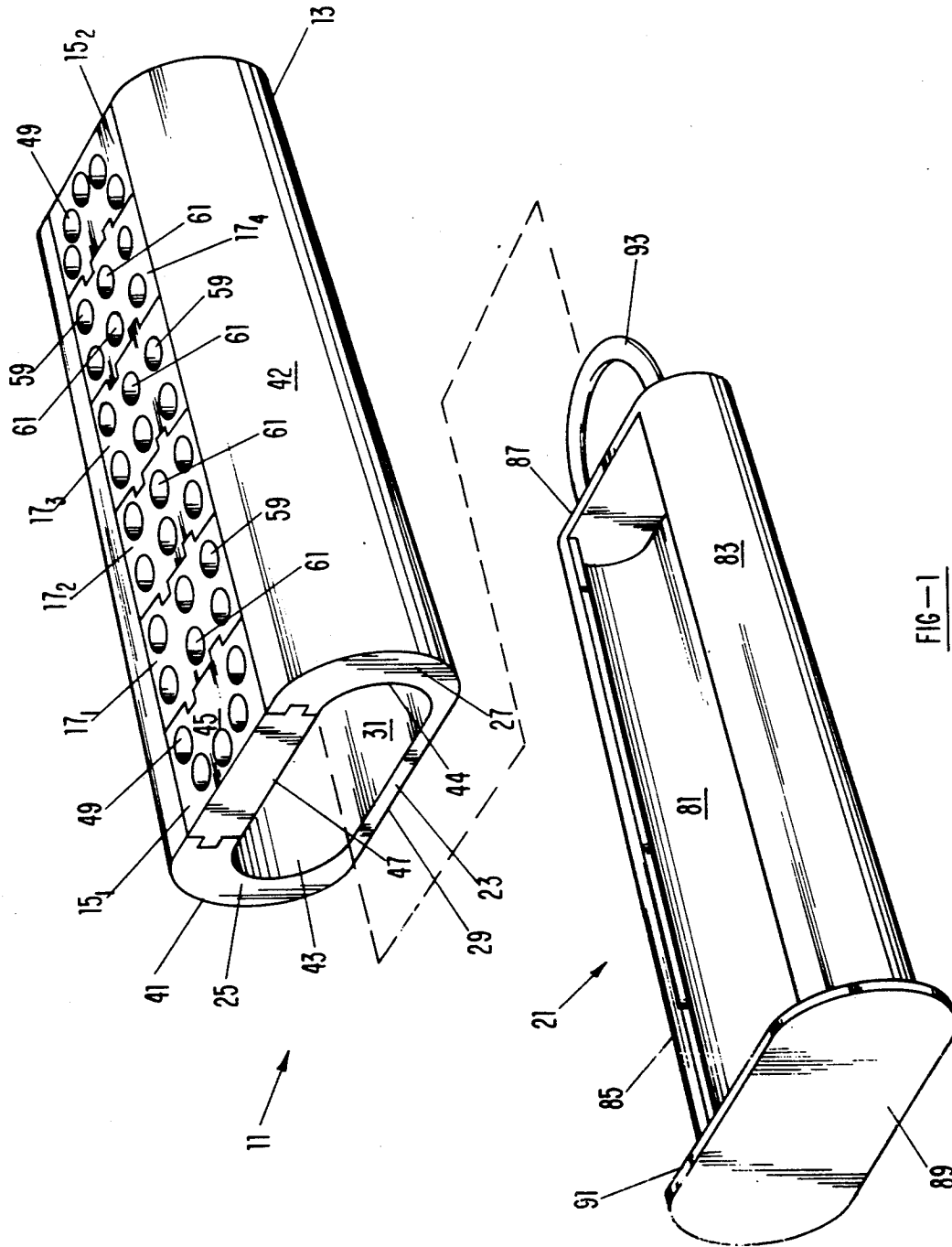


FIG-1

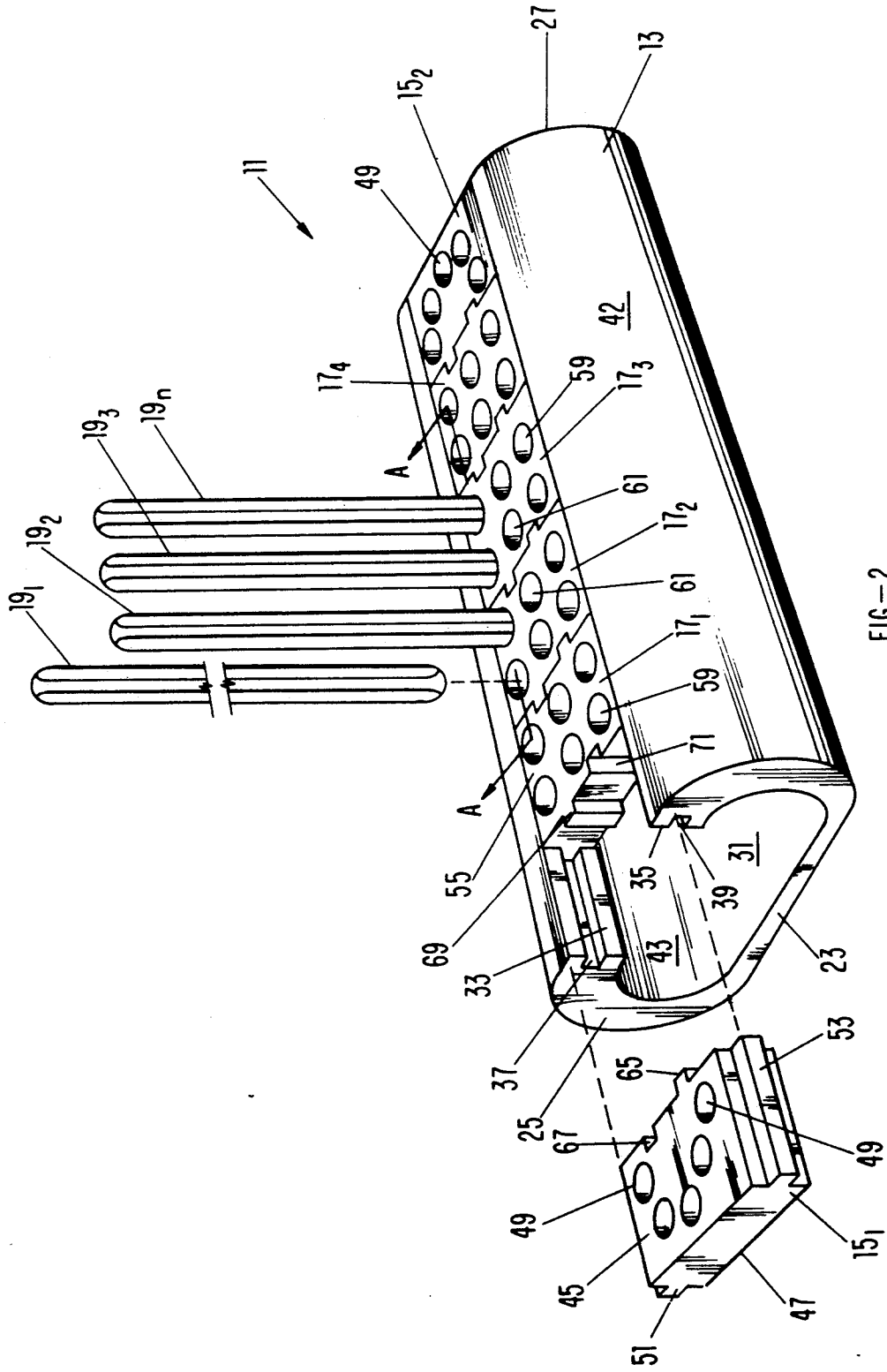


FIG-2

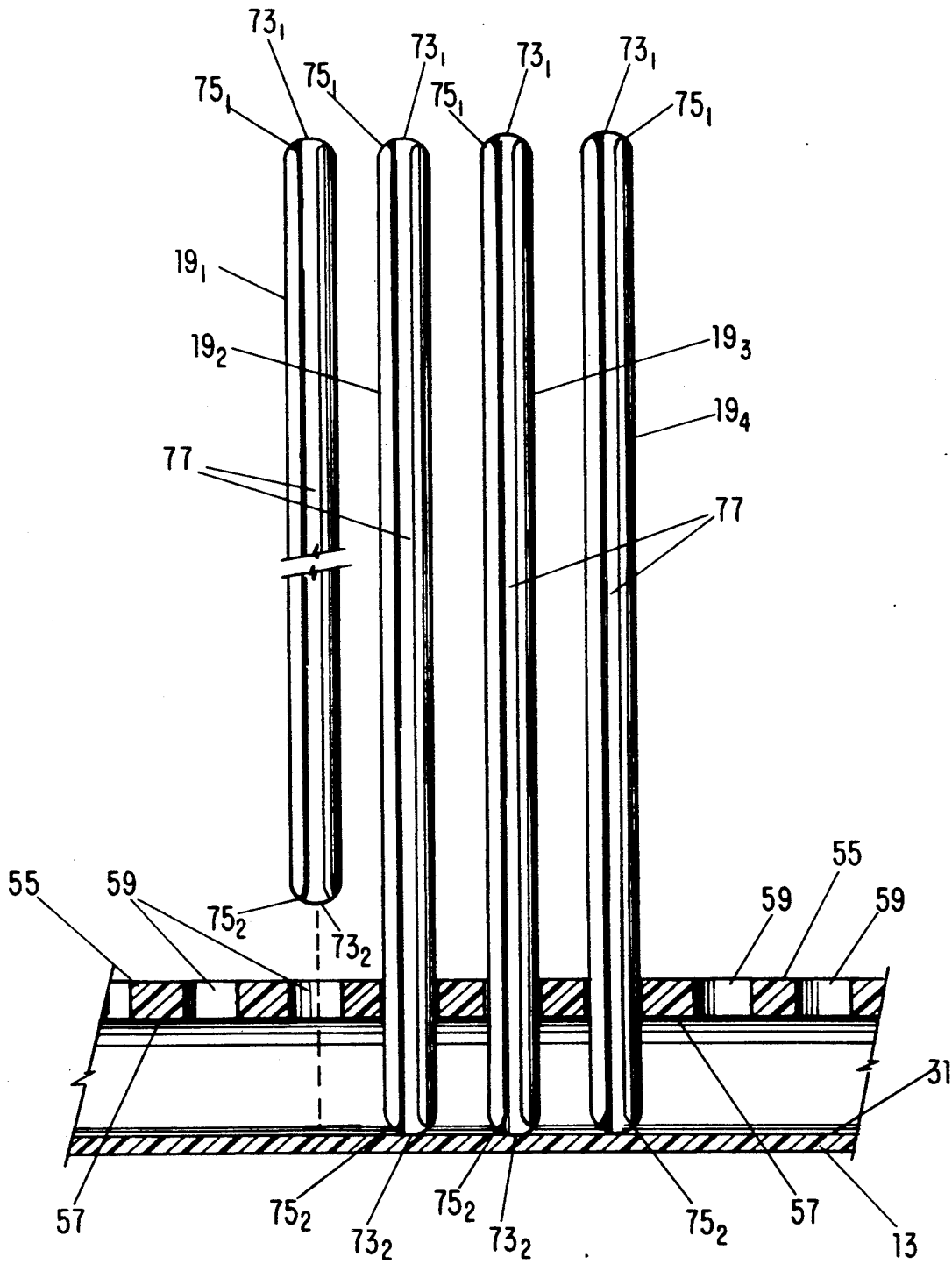


FIG-3

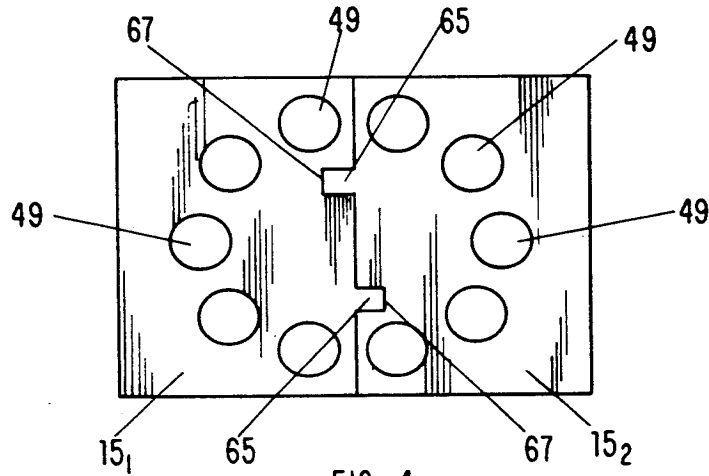


FIG-4

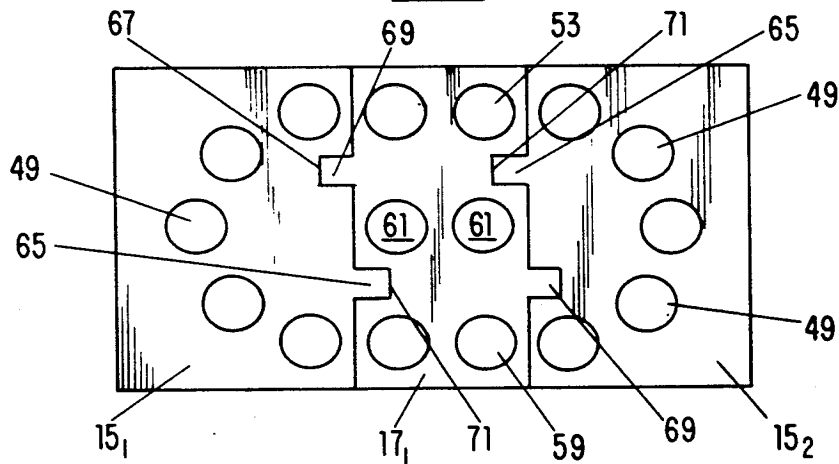


FIG-5

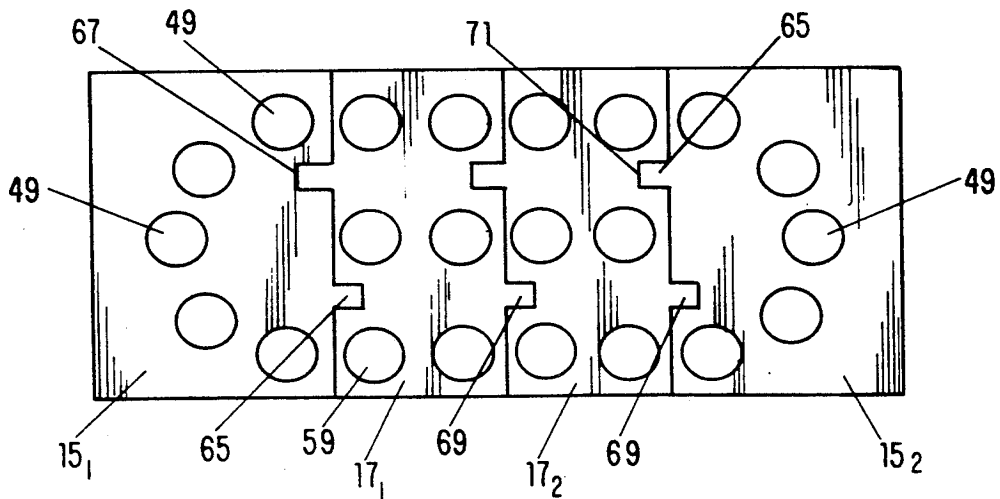


FIG-6

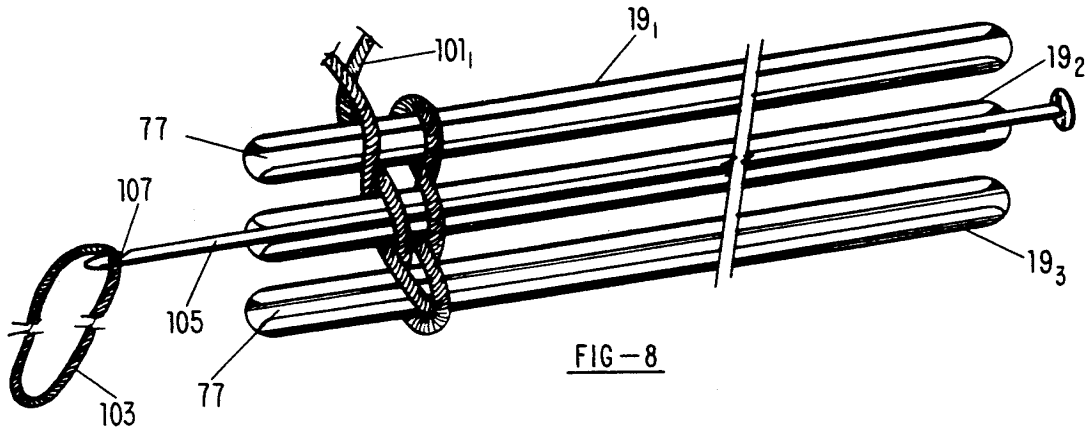


FIG-8

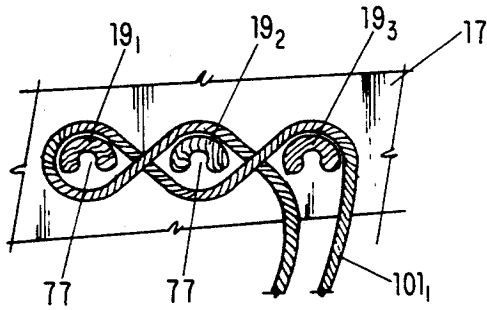


FIG-7A

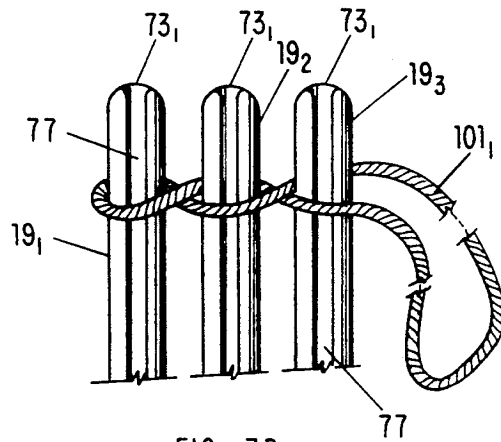


FIG-7B

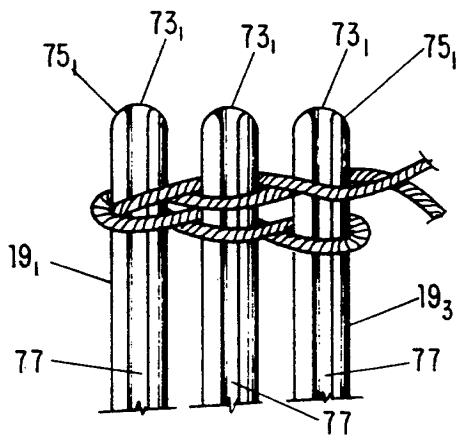


FIG-7C

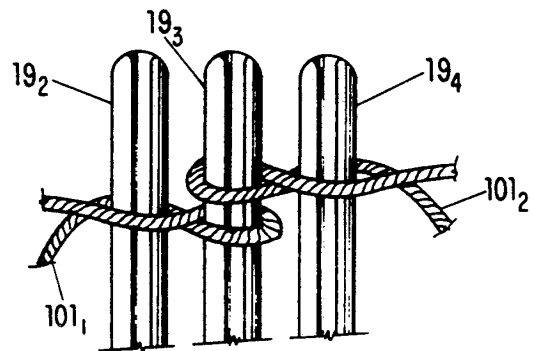


FIG-7D

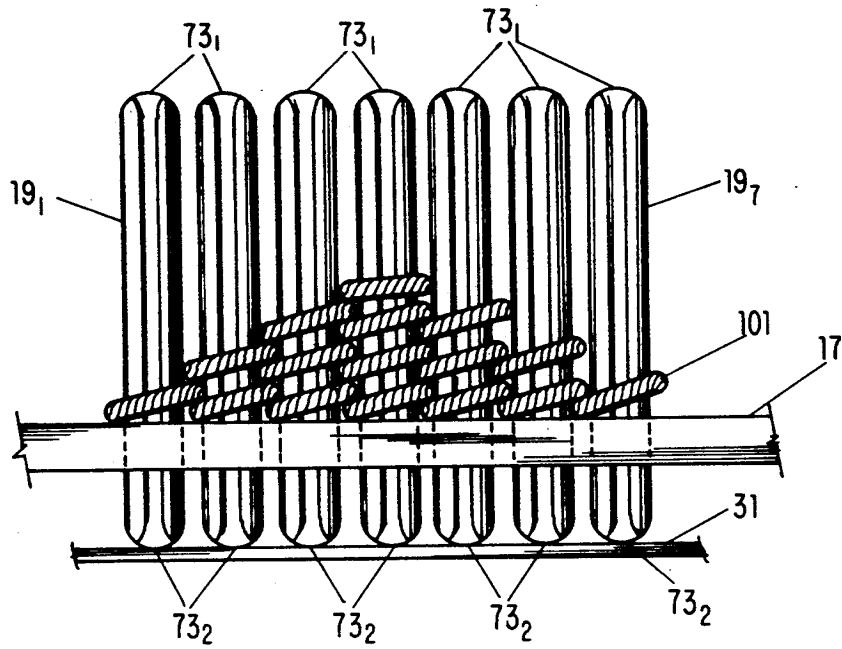


FIG-9A

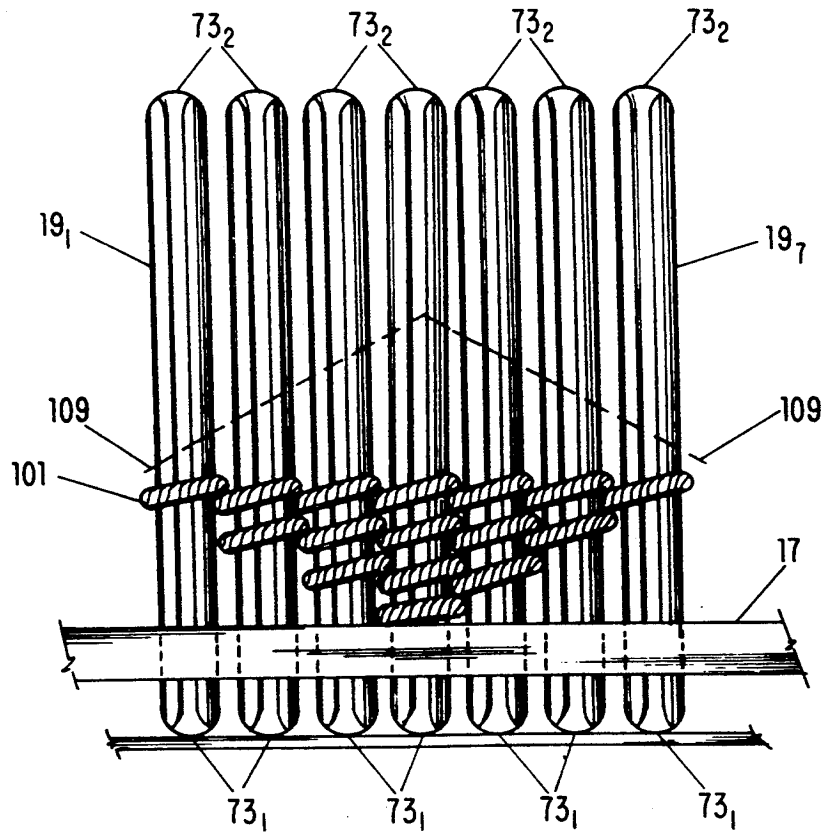


FIG-9B

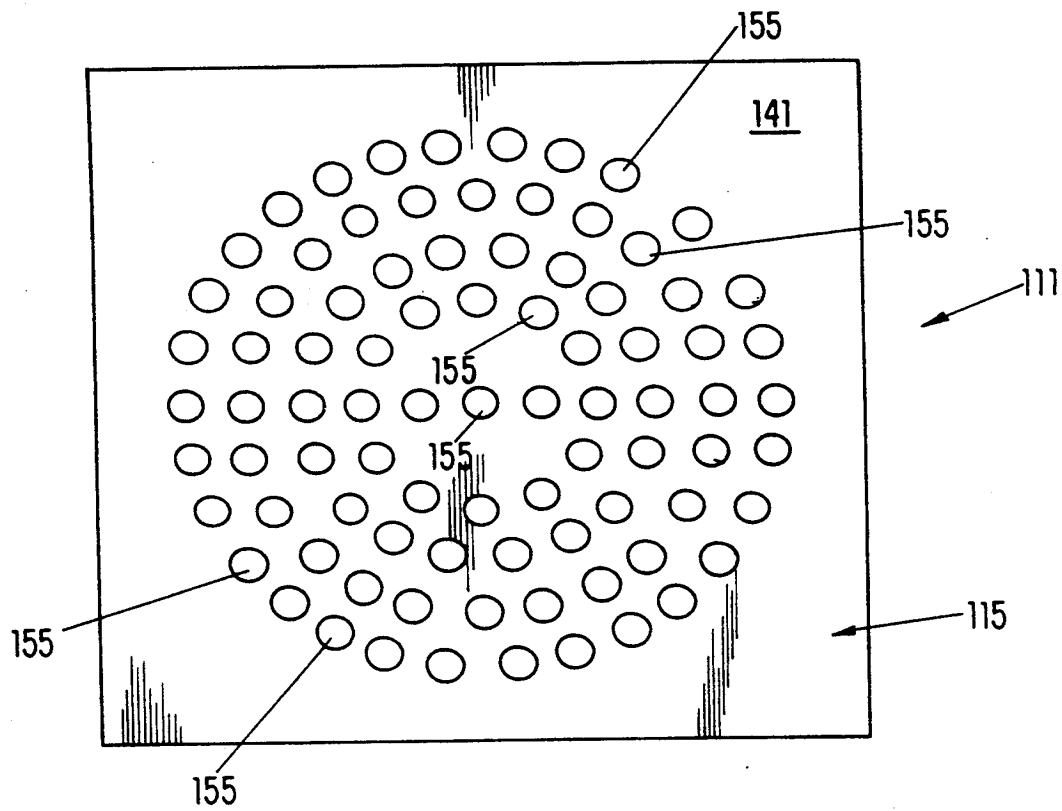


FIG-10

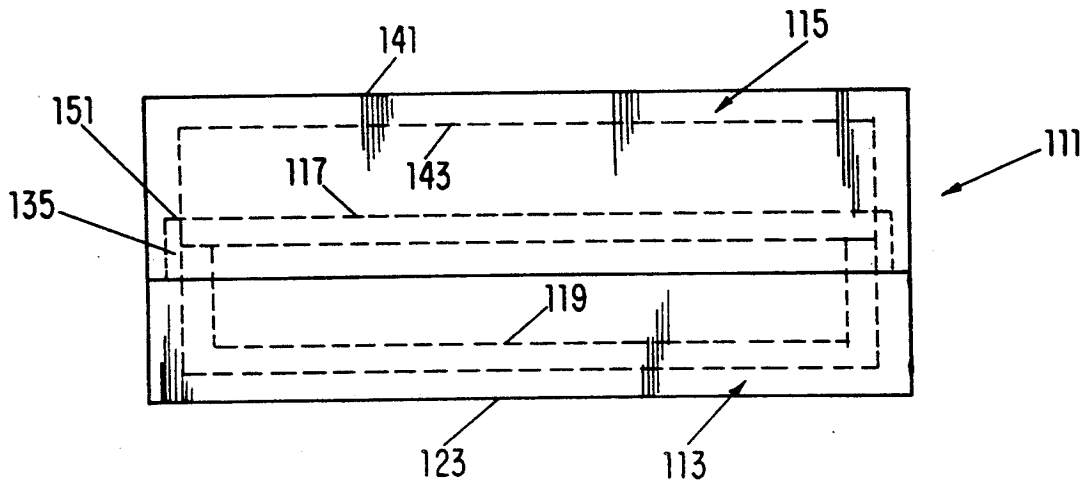


FIG-11

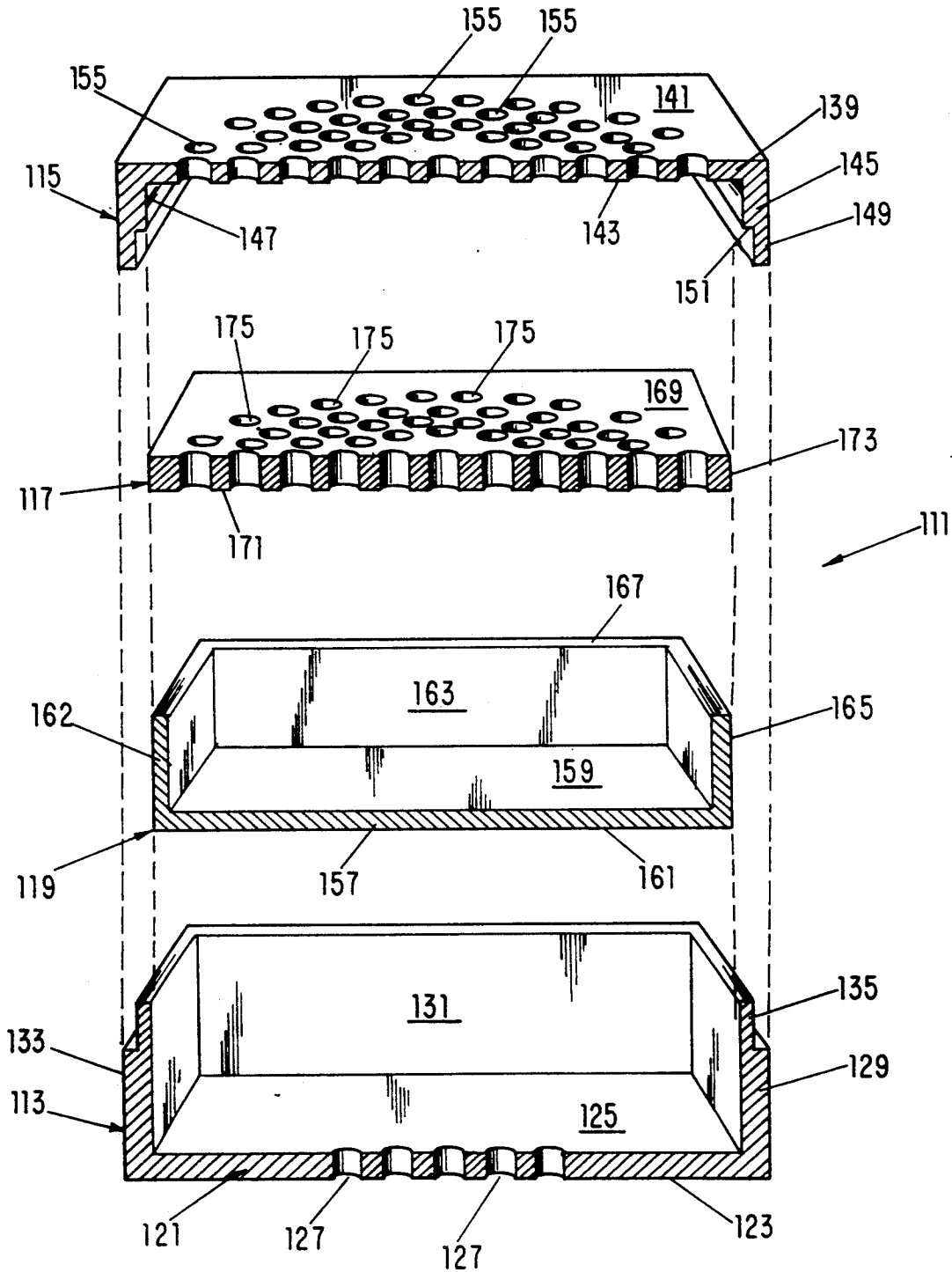


FIG - 12

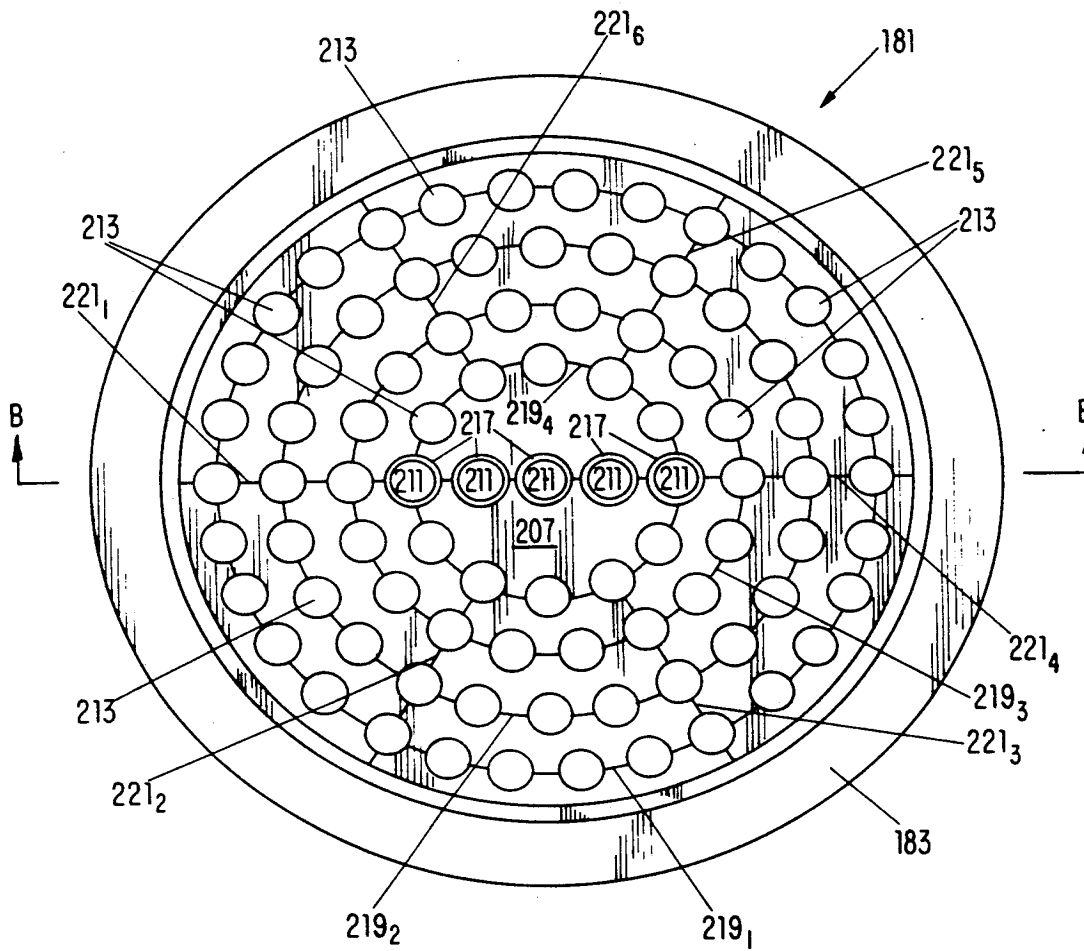


FIG-13

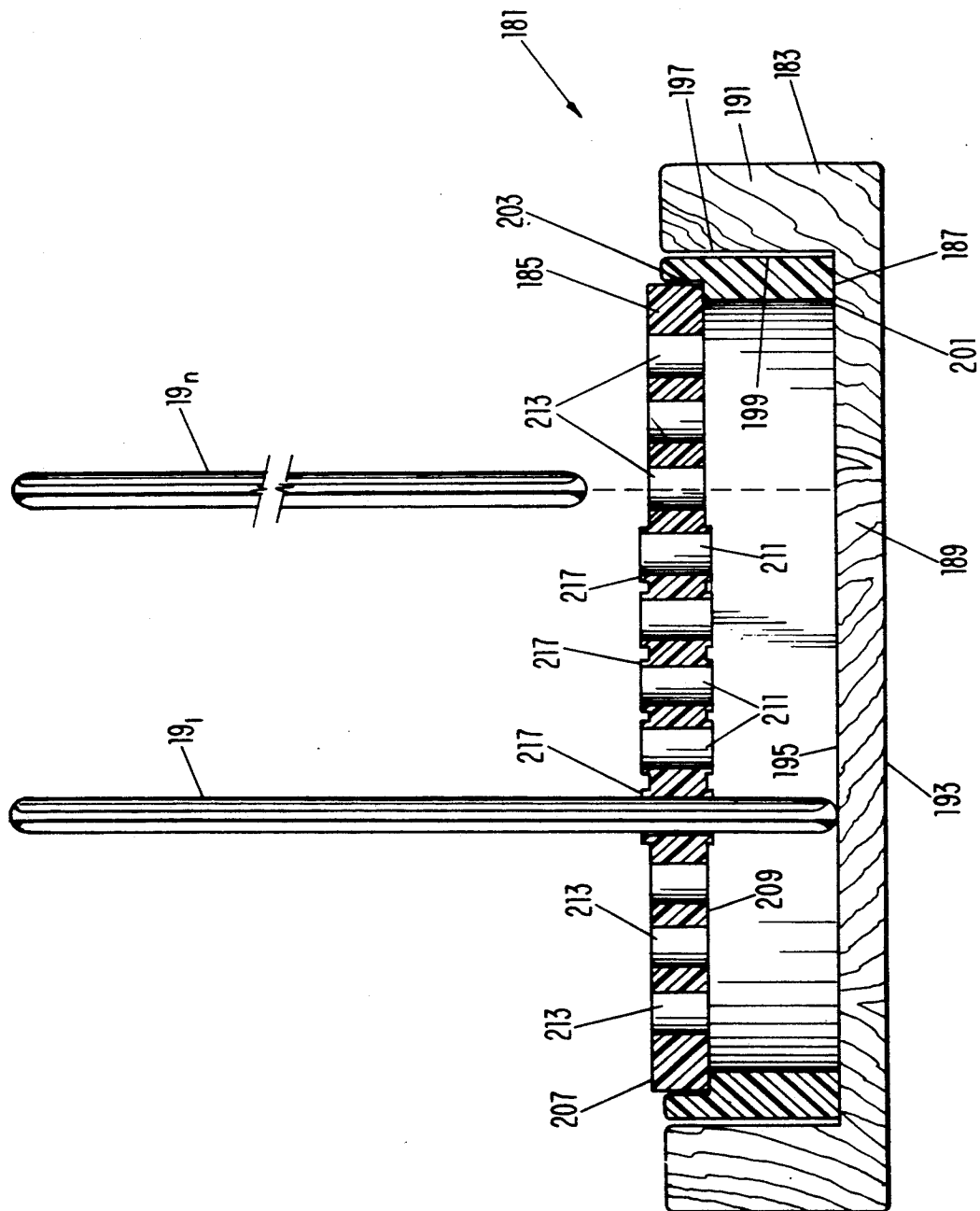


FIG-14

HAND TWINING LOOMS

TECHNICAL FIELD

The present invention relates generally to devices for performing handicraft activities, and more particularly to hand weaving looms.

BACKGROUND OF THE INVENTION

Handicraft activities have always enjoyed popularity for both educational and recreational purposes. Activities such as knitting, needlepoint, crocheting, and the like enhance manual dexterity and coordination, provide relaxation, and provide the satisfaction of creating a handmade article.

A number of hand weaving looms are disclosed in the prior art including: U.S. Pat. Nos. Re. 30,656, 4,192,046, 3,971,417, 2,739,437, 3,530,558, 2,803,051, 2,726,434, 2,563,510, 2,224,563, 2,166,668, 2,065,498, 1,975,924, 1,675,881, and 1,317,367; Canadian patents Nos. 1,044,573 and 1,003,305; and Swiss patents Nos. 258,565 and 164,808.

U.S. Pat. No. Re. 30,656 to Davitian discloses a weaving apparatus that includes a base portion 4, formed of resinous material, wood or metal. Mounted in and extending from base 4 are a plurality of elongated rods 8, which may be permanently or removably mounted in base 4 to form a comb-like frame assembly. The free end 22 of each rod 8 is notched. Notches 24 and lug posts 6 formed on base portion 4 cooperate to support the weft.

In the apparatus disclosed in van der Bosch-Meeves et al., U.S. Pat. No. 4,192,046, a locking apparatus, including lower block 1 and upper block 2, is used to hold a plurality of wooden weaving bars 11. At one end thereof, bars 11 have hooks 15 to which warp threads 18 are attached. In operation, those portions of bars 11 upon which the weft threads have already been drawn are locked between blocks 1 and 2 and the weaving proceeds on the ends opposite to hooks 15.

Gentil, U.S. Pat. No. 3,971,417 discloses a hand loom formed of a first set of needles 2_{1,3,5...13} held by holder 3 and a second set of parallel and alternating needles 2_{2,4,6...14} held by a second holder 5. All of these needles have at one end, a semicircular hook. At the opposite end each needle has a flattened region having an eye therein through which a warp filament is threaded. Holder 3 and the needles secured to it are movable laterally relatively to holder 5, to permit the odd numbered hooks to move relatively to the even number of hooks as the weft filament 17 is laid.

U.S. Pat. No. 3,739,437 discloses a weaving device in the form of a comb with a first set of fingers 36 being somewhat longer than a second set of fingers 38. This permits fingers 36 to be easily deflected relative to fingers 38 during the weaving process. U.S. Pat. No. 2,166,688 discloses a similar device.

Bacheller, U.S. Pat. No. 2,065,498 discloses what is described as a comb loom including a base 13 having a plurality of evenly spaced grooves 14. Fixed in the grooves are a like plurality of channel members 15. In addition to a straight base, a circular block 34 may be used to support the channel members. The open channel in each of members 15 permits a bodkin 20, to which is attached the warp thread, to pass through the weft. The bodkin has to be flexible to work and the channel members have to face in the same direction and align with the grooves 14. After the desired piece has been woven

on the loom it is, presumably, worked off members 15 with great difficulty. Denney, U.S. Pat. No. 1,675,881 also discloses a comb-like weaving structure in which a plurality of bars 19 are locked in a parallel arrangement by a timber 12 and a mating clamping bar or plate 13. Similarly, U.S. Pat. No. 1,317,367 to Hansen discloses a plurality of needles 10 firmly held by a holder of sheet metal. Swiss patents Nos. 258,565 and 164,808 appear to disclose similar structures.

The benefits associated with handicraft activities can be particularly important when working with children, including handicapped children, or with persons having learning and physical disabilities. For children, these activities can be stimulating and entertaining, and help instill the motivation required for initiating a project and following it through to completion. For persons having learning or physical disabilities, handicraft activities also provide rehabilitation and therapy, and can provide feelings of accomplishment and pride that come with creating an attractive craft item from simple starting materials. Even the set up of the loom provides a beneficial fine motor activity.

While activities such as knitting and needlepoint can be performed to make both useful and decorative items, these activities may be too complex and time-consuming for children and the learning or physically disabled. Handicrafts for these people can be most rewarding if they can be easily learned, and readily performed to create a finished article in a relatively short time. A handicraft activity which can be easily learned in a simple form, and can be further practiced employing more sophisticated techniques, is particularly desirable.

To this end, the present invention concerns a hand weaving device which: (1) is straightforward in construction for economical manufacture; (2) is easy to use; and (3) lends itself to use in various ways to permit practice of more sophisticated techniques as proficiency with the device is gained.

SUMMARY OF THE INVENTION

A method and apparatus for twining or weaving. The apparatus includes a plurality of elongated loom fingers and a loom. Each of the loom fingers is elongated, has first and second symmetrical tapered ends, and has an elongated groove running the entire length thereof. The loom includes: a first support that includes at least one plate-like member having a plurality of through holes therein which loosely support the loom fingers in a substantially parallel manner; a second support that has a finger engagement surface which, in the assembled form is adopted to engage one of the ends of each loom finger being used; and structure for detachably supporting the plate-like member altitudinally with respect to the second support.

The number of through openings in the plate-like member depends upon its size and shape. The through openings are arranged in one or more patterns, including straight lines, circles and/or ovals, or portions thereof. The pattern selected and the number of loom fingers used is at the discretion of the user.

In one embodiment, the second support is an elongated channel, with the structure for detachably supporting including a tongue and groove arrangement. In another embodiment, the second support includes a raised annular ring which has a lip thereon. The plate-like member is disc shaped and has an edge which cooperates with the lip for relative rotation thereto. In a

third embodiment the loom is in the form of a box like structure, with both the top and bottom have a hole pattern therein. In this case, the first support includes an intermediate master plate; the second support includes a tray for supporting this plate.

The method includes: positioning the plate-like member relative to the finger engagement surface; positioning the desired plurality of loom fingers in the through holes; wrapping or twining weft on the loom fingers; disengaging the plate-like member from the second support; moving the plate-like member relative to the finger ends which were in contact with the finger engaging surface; removing the fingers and the weft, as a unit, from the plate-like member; inserting the warp (from either end); and removing the loom fingers (without distorting the weaving). The loom fingers and weft can be repositioned relative to the second support with the opposite ends of the loom fingers in contact with the engaging surface, to reverse the direction of the weaving/twining of the weft.

The invention also contemplates the use of closed loop material as the weft, wherein the finger on which one loop ends is the same finger for starting the next loop.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the first preferred embodiment of the present invention, showing the loom finger storage tray;

FIG. 2 is an additional perspective view of the embodiment of FIG. 1;

FIG. 3 is a sectional view of the first embodiment taken along lines A—A of FIG. 2;

FIGS. 4, 5 and 6 are top plane schematics showing alternate tile and hole arrangements obtainable with the embodiment of FIG. 1;

FIGS. 7A, 7B, 7C and 7D are partial views illustrating the preferred method of weaving or twining the weft;

FIG. 8 is a perspective view illustrating the use of a hook and how it is used to pull the warp through the weft;

FIGS. 9A and 9B are schematics illustrating the method of weaving by reversing the direction of the loom fingers;

FIG. 10 is a top plane view of an alternate embodiment of the present invention;

FIG. 11 is an end view of the embodiment of FIG. 10;

FIG. 12 is an exploded perspective view of the embodiment of FIG. 10;

FIG. 13 is a top plane view of a third preferred embodiment of the present invention; and

FIG. 14 is a sectional view of the embodiment of FIG. 13, taken along lines B—B, with the addition of loom fingers.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to FIGS. 1-3, loom 11 includes a base 13, two loom finger positioning end plates 15₁₋₂, intermediate loom finger positioning plates 17₁₋₄, and a plurality of loom fingers 19_{1,2,3...n}. Loom 11 also includes loom finger and hook storage tray 21.

Base 13 includes a bottom portion 23, and integral curved side portions 25 and 27. Bottom portion 23 has a flat exterior surface 29 and an interior loom finger support surface 31. Side portions 25 and 27 terminate in opposing parallel faces 33 and 35 which have, respec-

tively, facing longitudinal, parallel grooves 37 and 39. The exterior curved surfaces 41 and 42 are continuous with bottom surface 29; the interior surfaces 15 43 and 44, with surface 31.

Each plate 15 has a top surface 45, a bottom surface 47, and a plurality of loom finger receiving through openings 49. Each plate 15 also includes opposite and parallel tongues 51 and 53 which are designed to be slidably received in grooves 37 and 39 of base 13, as illustrated. Similarly, each plate 17 has a top surface 55, a bottom surface 57, a plurality of loom finger receiving perimeter through openings 59, and a plurality of loom finger receiving center through openings 61. Each plate 17 also has a pair of opposite and parallel tongues (not illustrated) which are also slidably received in grooves 37 and 39. When assembled with base 13, surfaces 45 and 55 lie in substantially the same plane which is continuous with curved surfaces 41 and 42. The distance between surfaces 45, 55 and 47, 57 and the diameter of openings 49, 59 and 61 are chosen such that plates 15 and 17 support a plurality of loom fingers 19 in substantially parallel fashion, without binding such loom fingers in their respective openings.

With reference to FIGS. 1, 2 and 4-6, it will also be seen that each plate 15₁₋₂ has a tongue 65, and a notch 67. Similarly, each plate 17₁₋₄ has a pair of tongues 69 and a pair of notches 71. Each tongue 65, 69 may have one or more dimples (not shown) for, in the assembled position, mating with depressions (also not shown) in the mating notches 67, 71, to form a unitary plate structure. However, as those skilled in the art will appreciate, the tongue and notch locking arrangement is optional and may be replaced with an alternate mechanism for holding plates 15 and 17 together, or dispensed with altogether.

Also with reference to FIGS. 1, 5 and 6 it can be seen that the pattern of openings 49 and openings 59 is a closed loop. The pattern formed by openings 61 is a straight line. As is also evident with reference to FIGS. 4, 5, and 6, the number of plates held by base 13 can be varied to form the desired hole pattern (e.g. circle, oval, partial oval, semi-circle, or straight line) and the desired size. As should also be apparent to those skilled in the art, a single unitary plate having the desired hole pattern or patterns could be used instead of a plurality of plates 15₁₋₂ and 17₁₋₄. Further, long plates could be used to link two or more base members 13.

As is evident from FIGS. 2 and 3, each loom finger 19 has symmetrical ends 73₁ and 73₂, symmetrical tapered portions 75₁, 75₂ and an elongated groove 77 running the entire length thereof, which results in a C-shaped cross-section. As is also evident from FIGS. 2 and 3, each loom finger is slidably received in a through opening (49, 59 or 61, as the case may be) in plates 15 and/or 17, with one of its ends 73₂ in contact with surface 31. Each loom finger 19 is formed of wood, plastic or metal.

As an optional feature, loom 11 may also be provided with a storage tray 21 for loom fingers 19 and one or more hooks (such as illustrated in FIG. 8). Tray 21 includes an elongated channel portion 81, having curved exterior sides 83 and 85, a top end portion 87 and a bottom end portion 89. Exterior surfaces 83 and 85 and the bottom surface (not shown) are shaped and dimensioned to be slidably received within the channel formed by interior support surface 31 and surfaces 43 and 44. Bottom end portion 89 includes a continuous lip 91 which, when tray 79 is received within base 13, abuts

one of the end faces of base 13. Channel portion 81 has the same length as base 13 so when tray 79 is received in base 13, the exposed face (not shown) of top end portion 87 is flush with other of the end faces of base 13. Top end portion 87 also includes a handle 93 which can be used for carrying or hanging up loom 11.

Base 13, tray 79 and plates 15₁₋₂ and 17₁₋₄ are, preferably, made of plastic. However, other materials such as wood or aluminum, or combinations thereof, could also be used.

In operation, with plates 15 and 17 assembled with base 13 as illustrated in FIGS. 2 and 3, the desired plurality of loom fingers 19_{1,2,3,4...} are slidably received in openings 49, 59 and/or 61. For each loom finger 19, one of its symmetrical ends 73₂ touches and is supported by surface 31. While only four loom fingers 19 are illustrated, it will be appreciated that, for instance, an elongated straight line of loom fingers can be formed utilizing all of openings 49 and 59. With the loom fingers 19_{1,2,3,4} positioned as illustrated in FIG. 3, the weft can be applied with any conventional soft weaving material such as knits, bias fabrics, twines and yarns, in any conventional manner. However, it is preferred to use closed loop material made from fabric which has some elasticity, such as closed loops made from T-shirt type material.

With reference to FIGS. 7A, 7B, 7C and 7D, the preferred and what is believed to be a unique weaving technique is illustrated. As illustrated in FIGS. 7A and 7B the closed loop weft 101₁ is simultaneously wrapped around opposite sides of each loom finger 19_{1,2}. When the user reaches the end of a row, weft 101₁ is double turned around loom finger 19₃, as illustrated in FIG. 7C. Weaving or twining of weft 101₁ can proceed from left-to-right and then back (i.e., from right-to-left), which encourages the user to use opposite hands. Alternately, the position of loom 11 can be rotated 180°, as illustrated in FIG. 7C. The ending of weft 101₁ is illustrated in FIG. 7D, as is the starting of a second weft 101₂. The first loop of the second weft 101₂ always goes on the same loom finger 19₃ as the previous weft 101₁ ended on. This procedure eliminates two of the major chores of conventional weaving: knotting and burying ends.

After the weft weaving or twining has been completed, it and loom fingers 19_{1-n} can easily be removed from loom 11. Removal of a completed weft from apparatus such as disclosed in Bacheller, U.S. Pat. No. 2,065,498, is likely to be slow as the weaving has to be carefully worked off the fixed loom fingers of the comb loom. Even if carefully worked off, this causes distortion of the weaving. In contrast, with loom 11 of the present invention, plates 15 and/or 17 are slidably removed from base 13 and then quickly pushed off loom fingers 19 by placing the ends 73₂, which were in contact with surface 31, onto a flat surface and then pushing plates 15 and/or 17 toward such flat surface, whereby the tapered end portions 75₂ of loom fingers 19 are only loosely received in openings 49, 59 and/or 61 and can be easily removed from plates 15 and/or 17.

With reference to FIG. 8, after removal of loom fingers 19_{1-n} from plates 15 and/or 17, warp thread 103 or other suitable material is inserted in the weft formation by attaching such warp to a conventional hook 105 which is passed through channels 77 of loom fingers 19. Preferably the hook portion 107 of hook 105 faces the inside of channel 77. After the warp has been added,

each loom finger 19 can quickly and easily be removed on an individual basis, rather than trying to remove all loom fingers simultaneously, as required by Bacheller, U.S. Pat. No. 2,065,498.

The ability to quickly and easily remove loom fingers 19 (together with the weft formation thereon) from plates 15 and/or 17 provides an additional unique advantage of permitting weaving from the center out. For instance, as schematically illustrated in FIGS. 9A and 9B, a diamond pattern is easily created, by first weaving a triangle as illustrated in FIG. 9A. Loom fingers 19_{1,2,3,4,5,6,7} are then separated from plates 17 in the manner set forth above, plates 17 reassembled with base 13 and loom fingers 19_{1,2,3,4,5,6,7} reinserted such that opposite ends 73₁ now engage surface 31 of base 13. Weaving or twining of the other half of the diamond, such as illustrated by phantom lines 109 may now proceed with, for instance, the same type and color material. The foregoing is in contrast with conventional weaving techniques where, to weave a diamond or other shape, one has to weave the background first. For many people, particularly novice weavers, this is conceptually difficult.

With reference to FIGS. 10, 11 and 12, alternate loom embodiment 111 is illustrated. Loom 111 includes a base 113, a top 115, a master plate 117, and an intermediate and reversible tray 119. For purpose of illustration the width and breadth of loom 111 are reduced in scale. Wall thickness is also not to scale.

Base 113 includes a bottom 121, having an exterior surface 123 and a parallel interior surface 125, and a plurality of through loom finger receiving openings 127. Openings 127 are evenly spaced along a line which bisects bottom 121. Base 113 also includes a continuous side having an interior surface 131, an exterior surface 133 and a continuous lip 135.

Top portion 115 includes: a top 139, having exterior surface 141 and interior surface 143; and a continuous side 145, which includes interior surface 147, exterior surface 149, and continuous shoulder 151. As illustrated in FIG. 11, when assembled with base 113, lip 135 seals against shoulder 151; surfaces 133 and 149 form a continuous exterior side surface; and surfaces 131 and 147 form a smooth continuous interior side surface. As best illustrated in FIG. 10, top 139 includes a plurality of loom finger receiving through openings 155, with three in the middle and the rest evenly distributed around four concentric circles. The three middle openings, together with opposing pairs on each of the concentric circles form a straight line of eleven openings.

Reversible tray 119 includes a bottom 157, having interior surface 159 and exterior surface 161; and a continuous side 162, having interior surface 163, exterior surface 165 and continuous top edge 167. Tray 119 is dimensioned such that it fits, without too much lateral play, within both the interior of base 113 (as illustrated in FIGS. 11 and 12) or, alternatively, within the interior of top portion 115. When received in top portion 115, exterior surface 161 is in contact with interior surface 143.

Master plate 117 includes a top surface 169, a bottom surface 171, a continuous edge 173, and a plurality of loom finger receiving openings 175. The pattern of openings 175 matches that of openings 155; eleven in a straight line in the middle, the rest evenly distributed around four concentric circles.

In operation, with loom 111 assembled as illustrated in FIGS. 11 and 12, with plate 117 resting on top edge

167. A plurality of loom fingers 19_{1-n} is then placed in openings 155 and matching openings 175 in the desired pattern, with the loom finger ends 73₂ resting on surface 159 of tray 119. A straight line of up to eleven loom fingers is one pattern option; a continuous circle using the openings in the outermost concentric circle is another. After the weft is twined on loom fingers 19_{1-n}, top portion 115 of loom 111 is separated from base 113. Because of the lateral forces placed on loom fingers 19_{1-n} by the weft, loom fingers 19_{1-n}, top 115 and plate 117 are held together. Tray 119 is then removed from base 113 and placed on a flat surface with edge 167 in contact with such flat surface. The ends 73₂ of loom fingers 19_{1-n} are then placed in contact with surface 161 and plate 117 and top 115 pushed in a downward direction to move such loom fingers 19_{1-n} upward to the point where the tapered portions 75₂ are loosely received in openings 155 and 175 and can easily be removed therefrom.

If the user is a beginner, loom 111 can be flipped over so that the five hole pattern of openings 127 is exposed. Internally, the positions of tray 119 and plate 117 are reversed. Tray 119 is also flipped over, such that interior surface 159 faces one of surfaces 169, 171 of plate 117. The center five openings 175 of plate 117 match the straight line pattern of holes 127 in base 113. The operation of twining, removing the loom fingers from the loom, inserting the warp and then removing the loom fingers 19₁₋₅ is the same as described above.

A third embodiment of the invention is illustrated in FIGS. 13 and 14. Loom 181 includes a base 183, a loom finger positioning plate 185, a ring member 187 and a plurality of loom fingers 19_{1-n}. Base 183 includes a bottom portion 189 and a donut shaped side portion 191. Bottom portion has a flat exterior support surface 193 and a flat interior support surface 195. Side portion 191 includes an interior cylindrical surface 197. Ring 187 has an exterior cylindrical surface 199, a bottom surface 201 and an annular notch 203. Ring 187 and base 183 are made of suitable materials, such as plastic and wood, with cylindrical surface 199 dimensioned to be slidably and rotatably received within cylindrical surface 197, without either binding or undue slop.

Plate 185, which serves the same function as plates 15 and/or 17, includes a top surface 207, a parallel bottom surface 209 and a plurality of loom finger receiving through holes 211₁₋₅ and 213_{1-n}. Plate 185 also includes a cylindrical edge 215 which is dimensioned to slidably fit within notch 203 in ring 187. Openings 211 and 213 all have the same diameter. Openings 211 are, however, each provided with a raised cylindrical collar 217 to make the line defined by these openings more visible to the user, particularly the visually impaired user. As with the embodiment of FIGS. 1-3, the distance between surfaces 207 and 209 and the diameter of openings 211 and 213 is such that, when assembled, loom fingers 19 are held in substantially parallel fashion. Top surface 207 is also inscribed with a pattern of circular lines 219₁₋₄ and straight lines 221₁₋₆ to identify potential loom finger patterns for the user.

In operation, the embodiment of FIGS. 13 and 14 is the same as that of the embodiment of FIGS. 1-3. The pattern of openings 211 and 213 permits the formation of both rectangular and cylindrical woven articles. The use of ring 187 permits plate 185 to be rotated relative to base 183 for the convenience of the user, without undue wobbling of plate 185 relative to base 183.

Whereas the drawings and accompanying description have shown and described the preferred embodiment of the present invention, it should be apparent to those skilled in the art that various changes may be made in the form of the invention without affecting the scope thereof.

What I claim is:

1. A loom comprising:

- (a) a plurality of elongated loom finger elements, each of said elements having a first and a second end and an elongated groove therein, each said groove running the length of each said element;
- (b) a first loom finger support means including first and second surfaces interconnected by a plurality of openings, each of said openings adapted to slidably receive one of said loom finger elements, said surfaces being spaced from each other a distance which, in conjunction with the diameter of said openings is sufficient to position said plurality of said loom finger elements in substantially parallel fashion;
- (c) a second loom finger support means, said second support mean including a third surface for supporting one of said first or second ends of each of said loom finger elements when said first loom finger support means is assembled with said second loom finger support means and when said loom finger elements are received in said openings of said first loom finger support means; and
- (d) means provided on said first and second loom finger support means for detachably assembling said first loom finger support means relative to said second loom finger support means, whereby said first and second surfaces are spaced altitudinally with respect to said third surface, and whereby each of said loom finger elements passes through one of said openings in said first loom finger support means has its said first or second end in contact with said third surface, and whereby, when said means for detachably assembling are not positioning said first loom finger support means relative to said second loom finger support means, said loom finger elements can be moved relative to said openings by moving said first loom finger support means toward said ends which contacted said third surface.

2. The loom as set forth in claim 1, wherein said first loom finger support means comprises at least one plate-like member, and said second loom finger support means includes at least one side portion, said means for detachably assembling being provided on said first loom finger support means and said side portion.

3. The loom as set forth in claim 2, wherein said second finger support means includes two side portions which define a generally U-shaped channel member, said means for detachably assembling being provided on said, first loom finger support means and said side portions.

4. The loom as set forth in claim 3, wherein said side portions have a pair of elongated grooves therein and said plate-like member has a pair of tongues which are slidably received in said grooves, whereby said plate-like member may be detached from said second loom finger support means by a sliding motion to expose each of said one of said first or second ends which had been in contact with said third surface.

5. The loom as set forth in claim 3, wherein said first loom finger support member comprises a plurality of

9

plate-like members, each of said members having a pair of tongues and at least one said openings, which plate-like members can be selectively added and/or interchanged to vary the number of said openings available for said loom finger elements.

6. The loom as set forth in claim 5, wherein each of said plate-like members includes means for interlocking with an adjacent said plate-like member.

7. The loom as set forth in claim 3, further including an elongated tray for the storage of said loom finger elements which is slidably received within said second loom finger support means.

8. The loom as set forth in claim 2, wherein said side portion is a continuous closed perimeter which, in conjunction with said third surface, defines a cavity, said third surface defining the bottom of said cavity.

9. The loom as set forth in claim 8, wherein said plate-like member has said plurality of openings therein, which openings are arranged in circular, linear and semi-circular patterns which permit a multitude of choices for positioning said loom finger elements.

10. The loom as set forth in claim 8, wherein said plate-like member is disc shaped, said continuous side portion includes an annular ring, said means for detachably assembling including a lip on said ring, said disc shaped plate being rotatably received in said annular ring.

11. The loom as set forth in claim 10, wherein said ring is separate from said side portion and is received in said cavity for rotation relative to said side portion.

12. The loom as set forth in claim 1, wherein said first loom finger support means includes a first plate-like member having a plurality of said openings therein, said first loom finger support means also including a second plate-like member spaced from first plate-like member and having a plurality of said openings therein, said openings in said second plate-like member being in alignment with at least some of said openings in said first plate-like member.

13. The loom as set forth in claim 12, wherein said second loom finger support means includes a third plate-like member, and wherein said loom includes a fourth plate-like member having a plurality of openings therein which are in alignment with some of said openings in said second plate-like member.

14. The loom as set forth in claim 13, wherein said means for detachably assembling said finger support means and said second finger support means includes mating portions on said first and fourth plate-like members.

15. The loom as set forth in claim 14, wherein both said first plate-like member and said fourth plate-like member include projecting lips, said lips cooperating to, in the assembled loom, form a box-like structure.

16. The loom as set forth in claim 13, further including means on said third plate-like member for supporting said second plate-like member relative to both said first and fourth plate-like members.

10

17. The loom as set forth in claim 16, wherein said third plate-like member is a tray-like member having a flat bottom, said flat bottom forming said third surface.

18. The loom as set forth in claim 17, wherein said tray-like member can be placed on either side of second plate-like member for supporting said second plate-like member.

19. A method of twining or weaving comprising the steps of:

(a) positioning a plurality of elongated loom finger elements having first and second tapered ends and an elongated groove therein in a support which includes first and second movable member contacting said first tapered ends;

(b) wrapping weft on said loom finger elements;

(c) moving said loom finger elements substantially in unison relative to said first movable member whereby said first tapered ends are loosely received in said openings;

(d) removing said loom fingers and said weft, as a unit, from said first movable member;

(e) inserting warp to said weft; and

(f) removing said loom fingers from said warp and said weft.

20. The method as set forth in claim 19, wherein the warp can be inserted from either end of said loom finger elements.

21. The method as set forth in claim 19, wherein said loom finger elements are removed from said weft and warp without distorting said weft and warp.

22. The method as set forth in claim 19 wherein, after said loom fingers and said weft are removed from said first moveable member and before inserting said warp, said second ends of said loom fingers are inserted in said openings, and said loom fingers are moved relative to said first member until said second tapered ends contact said second moveable member, whereby the direction of wrapping said weft is reversed without removing said weft from said loom finger elements.

23. The method as set forth in claim 19, wherein said movement of said loom finger elements relative to said first moveable member includes the steps of moving said first member relative to said second member to expose said first ends, and further including the step of then contacting said first ends with a surface to move said loom finger elements relative to said first movable member whereby said first tapered ends are loosely received in said openings.

24. The method as set forth in claim 23, wherein said movement of said first member relative to said second member is a lateral sliding movement.

25. A method of twining comprising:

(a) positioning a plurality of loom finger elements in a spaced array;

(b) twining a piece of closed loop material on said fingers;

(c) ending said closed loop material on one of said fingers; and

(d) starting a second piece of closed loop material on said one of said fingers.

* * * * *



US005426788A

United States Patent [19] Meltzer

[11] Patent Number: **5,426,788**
[45] Date of Patent: **Jun. 27, 1995**

- [54] RING-LIKE HEADWEAR ORNAMENT
- [75] Inventor: Faith M. L. Meltzer, Ambler, Pa.
- [73] Assignee: U.S.A. Knitting Co., Inc., Philadelphia, Pa.
- [21] Appl. No.: 219,595
- [22] Filed: Mar. 29, 1994
- [51] Int. Cl.⁶ A42C 5/00
- [52] U.S. Cl. 2/171; 2/207; 2/DIG. 11
- [58] Field of Search 2/1, 171, 174, 207, 2/311, DIG. 11; 59/78, 79.1, 80, 82, 83; 63/3, 4, 5.1, 11; 87/13; 132/273, 275; D2/894, 895; D11/3, 4, 5, 6, 93

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Primary Examiner—Clifford D. Crowder
Assistant Examiner—Diana L. Biefeld
Attorney, Agent, or Firm—Caesar, Rivise, Bernstein, Cohen & Pokotilow, Ltd.

[57] **ABSTRACT**

An ornament, e.g., a hair band, headband, hat band, etc., and method of making it. The ornament comprises a plurality of looped links and a looped connecting member. Each of the looped links is formed of an flexible, somewhat elastic, e.g., knitted, material in the nominal shape of a toroidal loop, but bent into a shape having a bridging midsection and a pair of openings on each side of the bridging midsection. The looped connecting member is in the form of a loop of the same material and has a central opening. The looped links are interconnected with one another so that the bridging midsection of one looped link extends through the openings in the immediately adjacent looped link to form an elongated chain-link strip having a pair of ends. One of the ends of the chain-linked strip comprising the looped connecting member and the other end comprises the looped link forming that end. The looped connecting member is extended through the open ends of the looped link forming the other end of the chain-linked strip and is folded back over itself and secured, e.g., glued, to a portion of it to convert the chain-link strip into a ring. The looped connecting member simulates the shape of the other looped links of the ring.

17 Claims, 3 Drawing Sheets

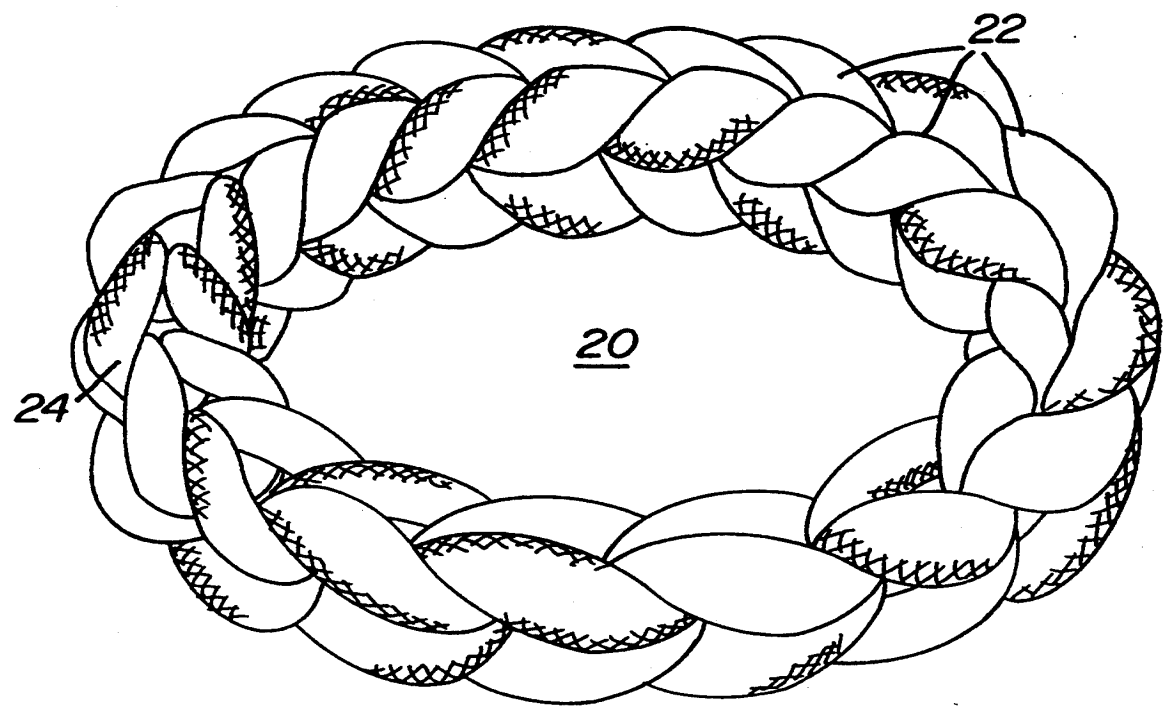




FIG. 2

FIG. 1

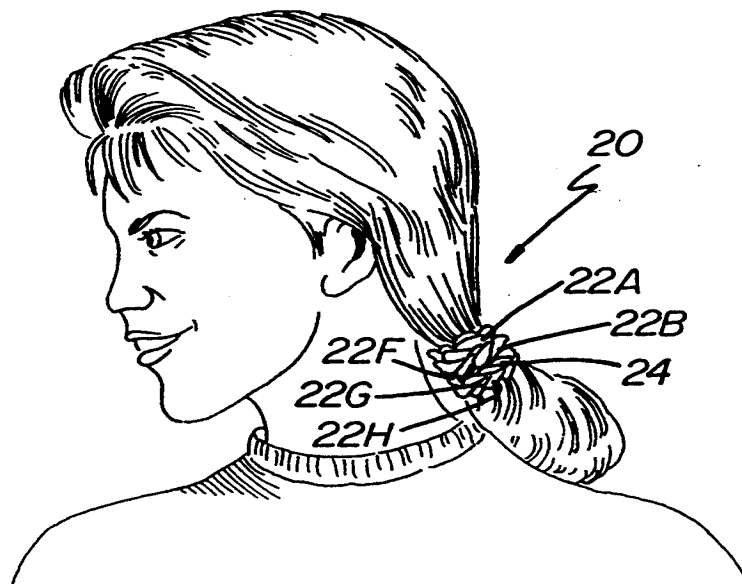


FIG. 3

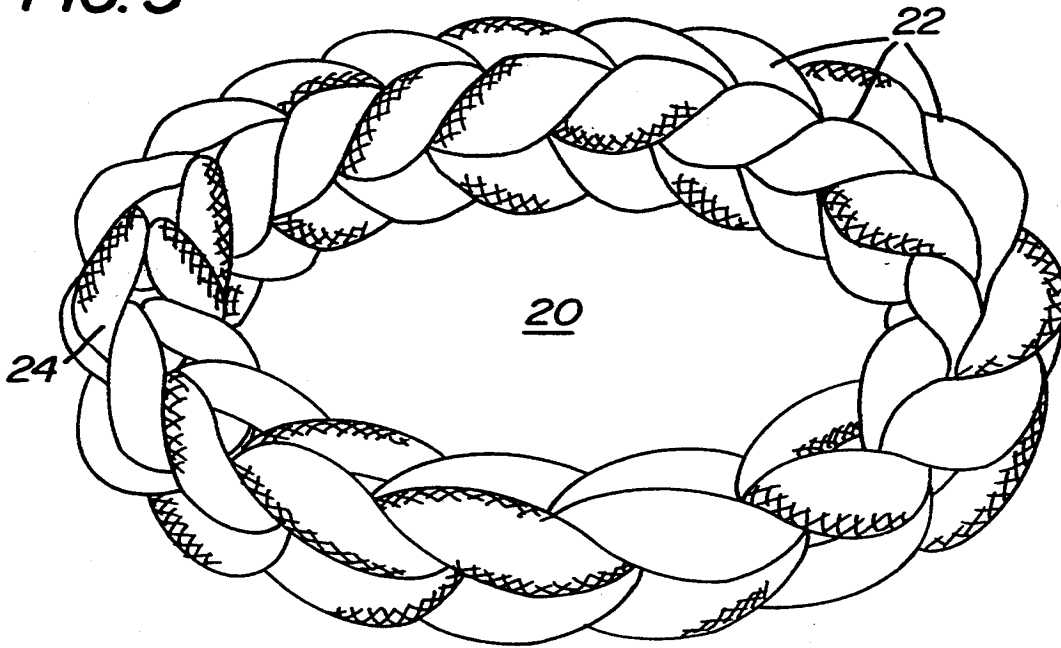
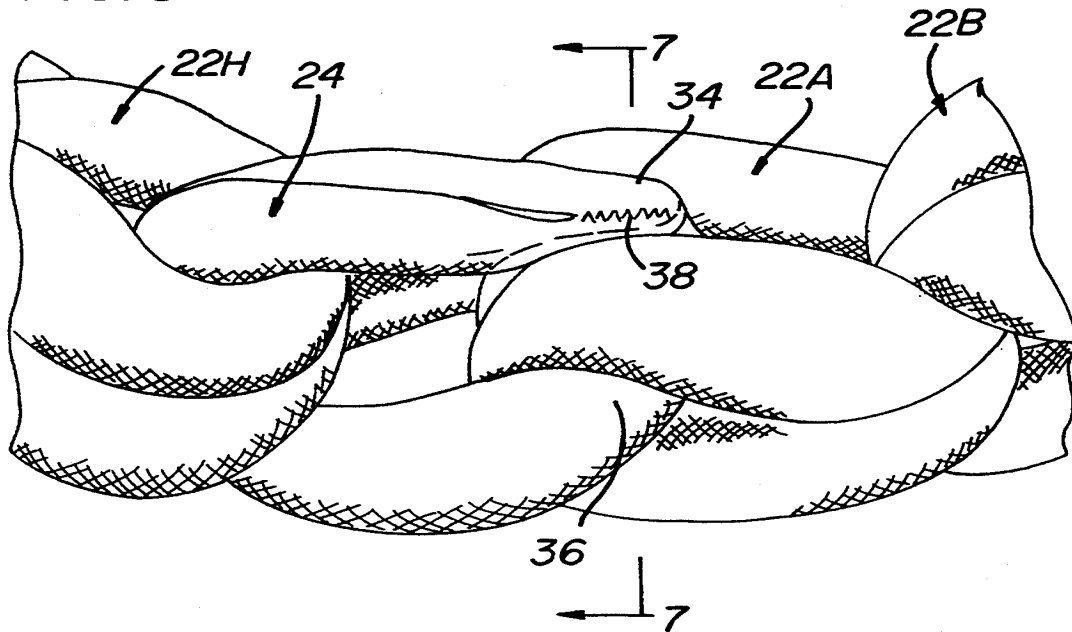
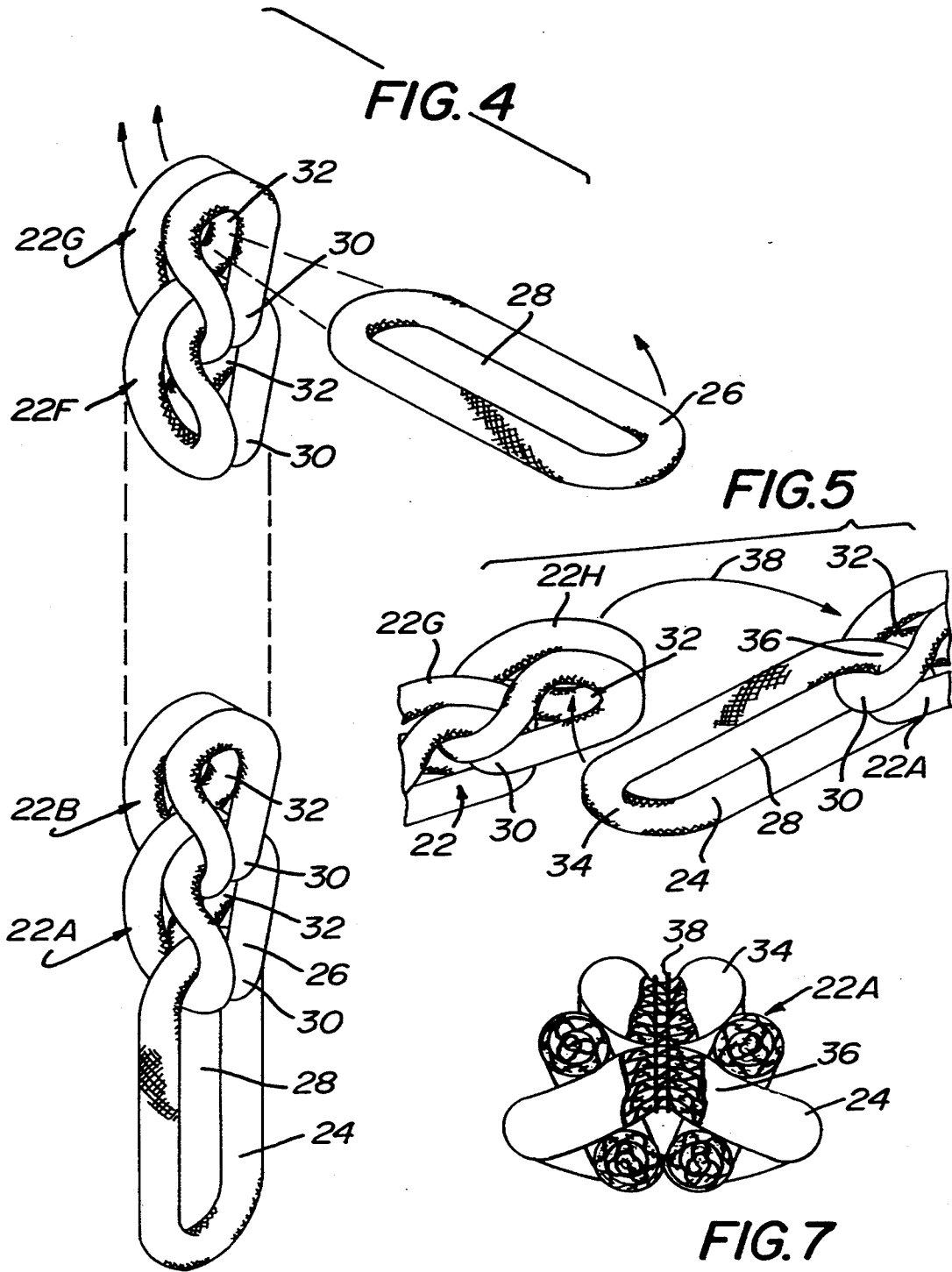


FIG. 6





RING-LIKE HEADWEAR ORNAMENT

BACKGROUND OF THE INVENTION

This invention relates generally to hair ornaments, and more particularly to devices for holding hair, e.g., a ponytail holder, or to be worn on the head as a headband or on a hat as a hat band.

Various elastic rings are commercially available for use as ponytail holders and some are the subject of United States Letters Patent. For example in U.S. Pat. No. 292,030 (Revson) there is shown a gathered fabric ring for holding a pony tail. Commercially available devices bearing that patent number are constructed utilizing a generously sized ring of a decorative fabric and having an elastic ring disposed therein to cause the fabric ring to gather into many folds. Resulting ring can then be used directly or twisted up into a "figure 8" configuration to hold strands of gathered hair, e.g., a ponytail.

In U.S. Pat. No. 5,156,171 (Goodman) there is disclosed a ponytail holder which is formed of a relatively wide fabric ring having a tubular annulus around a central hole, and an elastic ring having a portion that is readily grasped, as by having a knob, such as a bead, for pulling a loop of the elastic ring outside of the fabric ring. The fabric ring with its contained portion of the elastic ring, can encircle a pony tail once and grip the pony tail and the loop of the elastic ring outside the fabric ring can encircle the pony tail separately.

In U.S. Pat. No. 5,044,385 (Rhodes) there is disclosed a ponytail holder comprising an endless planar elastic band and at least one flattened hollow tube of a flexible material and having mutually interconnecting end edges. The flattened tube is interconnected to the elastic band along the axial length of the tube and the band while the band is in an expanded or stretched condition. The hollow tube includes radially inwardly directed cut edges extending through less than the width of the tube to form two ply radially outwardly extending members which simulate petals of a flower.

While the aforementioned patents appear generally suitable for their intended purposes, e.g., to hold the strands of hair forming a pony tail, the never the less leave something to be desired from one or more of the following standpoints, aesthetic appeal, effectiveness, ruggedness or resistance to damage from repeated usage, ease of manufacture, cost.

Hence, a need presently exists for a hair/head ornament which address those deficiencies of the prior art.

OBJECTS OF THE INVENTION

Accordingly, it is a general object of this invention to provide a hair/head ornament which overcomes the disadvantages of the prior art.

It is a further object of this invention to provide a hair/head ornament which is aesthetically pleasing.

It is still a further object of this invention to provide a hair/head ornament which is easy to make.

It is still a further object of this invention to provide a hair/head ornament which can be manufactured at a relatively low cost.

It is yet a further object of this invention to provide a hair/head ornament which is of rugged construction to be resistant to damage from repeated usage.

SUMMARY OF THE INVENTION

These and other objects of this invention are achieved by providing a ring-like ornament, e.g., a hair band, headband, hat band, etc., for wearing on a portion of a person and a method of making the ornament.

The ornament comprises a plurality of looped links and a looped connecting member. Each of the looped links is formed of an flexible, somewhat elastic material in the nominal shape of a loop but bent into a shape having a bridging midsection and a pair of openings on each side of the bridging midsection. The looped connecting member is in the form of a loop having a central opening.

The looped links are interconnected with one another so that the bridging midsection of one looped link extends through the openings in the immediately adjacent looped link to form an elongated chain-link strip having a pair of ends. One of the ends of the chain-linked strip comprises the looped connecting member. The other of the ends of the strip comprises a pair of openings of the looped link forming that other end.

The looped connecting member is bent into a shape having a free end which is extended through the openings of the looped link forming the other of the ends of the chain-linked strip and is bent over itself and secured by securement means to another portion of it to connect the ends of the chain-link strip and thereby form a ring-like ornament and so that the looped connecting member is shaped to simulate the shape of the looped links.

The method of the making the ornament entails providing a looped connecting member and a plurality of looped links formed of an flexible, somewhat elastic material in the nominal shape of a loop. The looped connecting member has a central opening and is formed of the same material as the looped links. The looped links are connected together by supporting the looped connecting member, squeezing a first looped link together to flatten it somewhat and passing the flattened first looped link within the central opening of the looped connecting member. Then the first looped link is opened within the looped connecting member in a manner so that the first looped link includes a bridging midsection extending through the central opening in the looped connecting member and a pair of end openings extending outside of the looped connecting member. Then a second looped link is squeezed together to flatten it somewhat and the flattened second looped link is passed within the extending end openings of the first looped link. This procedure is continued until a predetermined number of looped links are connected together to form a chain-link strip.

The chain-linked strip has a first end defined by the looped connecting member and a second end defined by a looped link having a bridging midsection and a pair of end openings.

The looped connecting member is then grasped to flatten a portion of it and to extend the flattened portion of it through the end openings of the looped link forming the second end of the chain-linked strip. The flattened portion of the looped connecting member is bent over itself and secured to the portion thereof which extends through the end openings of the first looped link. This action thereby interconnects the linked loops and forms a closed ring while causing the looped connecting member to simulate the appearance of the looped links of the ring, so that the entire ring looks like it is formed of serially connected looped links.

DESCRIPTION OF THE DRAWINGS

Other objects and many attendant features of this invention will become readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is an isometric view of a person wearing a ponytail holder embodiment of an ornament constructed in accordance with this invention;

FIG. 2 is an isometric view of a person wearing a head band embodiment of an ornament constructed in accordance with this invention;

FIG. 3 is an enlarged isometric view of the embodiment of the ornament shown in FIG. 2;

FIG. 4 is an enlarged exploded isometric view showing a portion of the procedure entailed in the making of the ornaments of FIGS. 1 and 2;

FIG. 5 is an enlarged isometric view showing another portion of the procedure for making the ornaments of FIGS. 1 and 2;

FIG. 6 is an enlarged isometric view of a portion of the ornaments shown in FIGS. 1 and 2; and

FIG. 7 is a sectional view taken along line 7—7 of FIG. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to various figures of the drawing where like reference numerals refer to like parts there is shown at 20 in FIG. 1, a ring-like ornament for use on the head of a person constructed in accordance with the subject invention. Depending upon the size the ornament 20 can be used as a hair, e.g., pony tail holder (FIG. 1), a head band (FIG. 2), a hat band (not shown), or any other decorative object worn on the head or on a hat.

The ornament 20 basically comprises a plurality of identical looped links 22 (FIGS. 1 and 2) and a connecting loop 24 (FIGS. 1 and 7). In the pony tail holder embodiment of FIG. 1 the ornament comprises eight links 22A—22H and a connecting loop 24. The looped links 22A—22H are interconnected, as will be described later, to form a chain-linked strip, having a pair of ends which are connected together by the connecting loop 24 to close the ring. In the head band or hat band embodiment significantly more looped links 22. Thus, as can be seen in FIGS. 2 and 3 the head band embodiment includes 17 looped links and one connecting loop (although more or less looped links can be used, depending upon the size desired—as will be described later).

Each of the looped links 22 and the connecting loop 24 of each ornament is formed of a flexible, somewhat stretchable material. Moreover, all of the looped links and the connecting loop may be formed of the same material, having the same color and texture, or may be formed of different materials/colors/textures, depending upon the aesthetics desired. In some preferred embodiments the looped links and connecting loop are formed of identically sized loops of a knitted fabric, which may be of the same color or different colors etc. The loops are preferably formed by taking an elongated tube of knitted material of a predetermined inside diameter, e.g. 2 inches (5.08 cm), severing transverse sections of a predetermined width, e.g., 1 inch (2.54 cm), therefrom, and rolling each of the sections up to form plural toroidal shaped loops 26 (See FIG. 4) of approximately 2 inch (5.08 inside diameter).

A first of the toroidal shaped loops 26 makes up the heretofore identified connecting loop 24, while other toroidal shaped loops make up the looped links of the ornament. Thus, for the pony tail holder of FIG. 1 eight toroidal shaped loops are used to make up the looped links 22A—22H. It should be pointed out at this juncture that the ornament shown herein, with eight looped links 22A—22H, and one connecting loop 24 (which is bent into a shaped simulating a looped link—as will be described later) is only exemplary. Thus, the size and number of looped links which are used in an ornament 20 of this invention is a function of the desired diameter of the ornament. When an ornament is formed using eight looped links 22A—22H, and one connecting loop, each formed of toroidal loops of the exemplary size set forth above, the resulting "nine loop ornament" has an unstretched inside diameter of approximately 1.25 inches (3.18 cm).

Reference should now be made to FIGS. 4—7 to understand the manner in which the ornament is made. Thus, to make the ornament 20 the connecting loop 24 is supported by hand (or by some mechanical means) and a second toroidal loop 26 is connected to it to form the first looped link 22A. In particular, the second toroidal loop 26 is squeezed together to flatten it somewhat. This flattened loop is then passed through the central opening 28 of the looped connecting member 24. Then the ends of the flattened second toroidal loop 26 are opened while its mid-portion is within the opening 28 of the looped connecting member 24 so that the second toroidal loop 26 is in a configuration having a bridging midsection 30 and a pair of end openings 32, with the bridging midsection 30 extending through the opening 28 in the looped connecting member 24 and the end openings 32 being axially aligned with each other and located outside of the looped connecting member 24.

As should be appreciated by those skilled in the art this action forms the second toroidal loop into the first looped link 22A.

After the first looped link 22A is formed (and connected to the connecting loop 24) a third toroidal loop 26 is squeezed flat and inserted through the axially aligned extending end openings 32 of the first looped link 22A. The third toroidal shaped loop 26 is then opened so that it is in the same configuration as the first looped link 22A, to thereby form the third toroidal loop into the second looped link 22B. This procedure is then repeated to form and connect the remaining looped links 22C—22H of the ornament 20.

Once the last looped link, e.g., 22H, has been formed the resulting construction will be in the form of an elongated chain-linked strip having a first end defined by the connecting loop 24 and a second end defined by the last of the looped links, i.e., 22H, as shown in FIG. 5.

In order to complete the ornament the elongated strip is rolled into a ring, bringing its two ends in close proximity to each other as shown in FIG. 5. Then the looped connecting member 24 is grasped, either by hand or by machine, to flatten it so that it has a free end 34 disposed opposite to the end 36 to which the first looped link 22A is secured. The flattened free end portion 34 of the connecting member 24 is then extended through the axially aligned end openings 32 of the looped link 22H which forms the opposite end of the chain-linked strip. Then the flattened portion free end portion 34 of the looped connecting member 24 is bent back over itself in the direction of arrow 38 and into engagement with its

end portion 36 and is secured thereto by any suitable means. In the embodiment shown herein the securement is by one or more stitches 38 and/or an adhesive (not shown). As shown clearly in FIG. 7 this action forms the connecting loop 24 into a configuration which simulates the appearance of a looped link and closes ring, thereby completing the ornament. The resulting ring-like ornament will have the appearance of an unbroken chain-link since each of the members making it up will exhibit the same general appearance.

The ornament 20 can be used in any suitable manner. For example, a "nine looped ornament" like the exemplary one described above, can be doubled up, i.e., bent into the shape of a "figure 8" and flattened so that it forms a double ring of smaller diameter. This arrangement is shown in FIG. 1 and is particularly suitable for holding a small bunch of hair, e.g., a pony tail, together. For larger bunches of hair, the ornament 20 can be used directly without doubling it up. When the ornament is to be used as a headband or hat band it is can be used either singly, doubled, tripled, etc., depending upon the number and size of the looped members making it up.

In the interests of aesthetic appeal the ornament may be provided with decorative ornamentation on component members. Such ornamentation can take various forms, e.g., beads, jewels, pins, etc.

It should be pointed out at this juncture that other material than the disclosed knitted fabrics can be used for forming the looped links and connecting loop. In fact, the material forming those members need not be a fabric at all, so long as it is somewhat elastic so that when formed into a loop or band it is can be stretched and twisted or bent. Moreover, the members forming the looped links and the connecting loop need not be toroidal, nor need they be fabricated as described above.

It should also be pointed out the connector loop can be secured to itself in various other manners than adhesives or stitching 38 so that it closes the ring-like ornament and simulates a looped link.

Without further elaboration the foregoing will so fully illustrate my invention that others may, by applying current or future knowledge, adapt the same for use under various conditions of service.

I claim:

1. A ring-like ornament for wearing on a portion of a person comprising a plurality of looped links and a looped connecting member, said looped connecting member comprising a loop of a somewhat elastic material and having a central opening therein, each of said looped links being formed of an flexible, somewhat elastic material in the nominal shape of a loop but bent into a shape having a bridging midsection and a pair of openings on each side of the bridging midsection, said looped links being interconnected with one another so that the bridging midsection of one looped link extends through the openings in the immediately adjacent looped link to form an elongated chain-link strip having a pair of ends, one of said ends of said chain-linked strip comprising said looped connecting member, the other of said ends of said strip comprising a pair of openings of the looped link forming that other end, said looped connecting member being bent into a shape having a free end which is extended through the openings of the looped link forming the other of the ends of the chain-linked strip and is bent over itself and secured by securement means to another portion of the looped connecting member to connect the ends of the chain-link strip and

thereby form a ring-like ornament, and with the looped connecting member being shaped to simulate the shape of the looped links.

2. The head ornament of claim 1 wherein said looped links and said looped connecting member are each formed of an elastic fabric.

3. The head ornament of claim 2 wherein said elastic fabric is knitted.

4. The head ornament of claim 1 wherein said securement means comprises an adhesive.

5. The head ornament of claim 1 wherein said securement means comprises at least one stitch.

6. The head ornament of claim 1 wherein said looped links are all of the same color.

7. The head ornament of claim 1 wherein said looped links comprises plural colors.

8. The head ornament of claim 1 wherein said ring can be configured for holding strands of hair therein.

9. The method of claim 1 wherein said looped links are each formed of a loop of fabric and wherein said looped connecting member is formed of a loop of the same fabric.

10. The method of claim 9 wherein said loop of fabric is initially in the form of a tube which is severed to form plural loops of fabric.

11. The method of claim 10 wherein each of said plural loops of fabric is rolled up to form an toroidal shaped member.

12. The method of claim 9 wherein said fabric is knitted.

13. The method of claim 9 wherein said fabric is of the same color.

14. The method of claim 9 wherein said fabric is of different colors.

15. A method of forming a ring-like ornament for wearing on a portion of a person comprising a plurality of looped links and a looped connecting member shaped like said looped links, said method comprising providing a plurality of looped links formed of a flexible, somewhat elastic material in the nominal shape of a loop, providing a looped connecting member having a central opening and being formed of the same material as the looped links, interconnecting said looped links together by supporting said looped connecting member, squeezing a first looped link together to flatten it somewhat and passing the flattened first looped link within the central opening of the looped connecting member, opening the first looped link within said looped connecting member in a manner so that the first looped link includes a bridging midsection extending through the central opening in the looped connecting member and a pair of end openings extending outside of the looped connecting member, squeezing a second looped link together to flatten it somewhat and passing the flattened second looped link within the extending end openings of the first looped link, continuing said procedure until a predetermined number of looped links are connected together to form a chain-link strip, said chain-linked strip having a first end defined by said looped connecting member and a second end defined by a looped link having a bridging midsection and a pair of end openings, grasping said looped connecting member to flatten a portion of it and extending said flattened portion of the looped connecting member through the end openings of the looped link forming the second end of the chain-linked strip, and then bending said flattened portion of the looped connecting member over itself and securing said flattened portion of the looped connecting

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member to the portion thereof which is extending through the end opening of the first looped link to thereby interconnect the linked loops and form a closed ring and cause the looped connecting member to simulate the appearance of the looped links of the ring.

16. The method of claim 15 wherein the securing of

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the portions of the looped connecting member together is effected by use of an adhesive.

17. The method of claim 15 wherein the securing of the portions of the looped connecting member together is effected by use of at least one stitch.

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US00D592537S

(12) **United States Design Patent**
Darnell

(10) **Patent No.:** **US D592,537 S**

(45) **Date of Patent:** **** May 19, 2009**

(54) **BRACELET**

(57) **CLAIM**

(76) Inventor: **Darin Darnell**, 3311 Cumberland Dr.,
Missouri City, TX (US) 77459

I claim the ornamental design for a bracelet, as shown and described.

(**) Term: **14 Years**

DESCRIPTION

(21) Appl. No.: **29/319,456**

The claimed bracelet is intended to be worn as an accessory on the wrist or ankle of the user.

(22) Filed: **Jun. 10, 2008**

FIG. 1 is a top view of a first embodiment of the invention.

(51) **LOC (9) Cl.** **11-01**

FIG. 2 is a left side view thereof.

(52) **U.S. Cl.** **D11/3**

FIG. 3 is a right side view thereof.

(58) **Field of Classification Search** D11/1-25,
D11/26-39; 63/3, 3.1, 3.2, 4, 5.1, 5.2, 15
See application file for complete search history.

FIG. 4 is a front view thereof showing the location of an optional graphical imprint in dashed lines.

FIG. 5 is a rear view thereof.

FIG. 6 is a bottom view thereof.

FIG. 7 is a top view of a second embodiment of the invention.

FIG. 8 is a left side view thereof.

FIG. 9 is a right side view thereof.

FIG. 10 is a front view thereof showing the location of an optional graphical imprint in dashed lines.

FIG. 11 is a rear view thereof; and,

FIG. 12 is a bottom view thereof.

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D562,717	S	*	2/2008	Gonzales	D11/3
2002/0139142	A1	*	10/2002	Marandola	63/22

The bracelet is comprised of linked rubber bands.

The broken line showing of an imprint in FIGS. 4 and 10 is for illustrative purposes only and forms no part of the claimed design.

* cited by examiner

Primary Examiner—Cathron C Brooks

Assistant Examiner—Melanie Levy

(74) *Attorney, Agent, or Firm*—Wong, Cabello, Lutsch,
Rutherford & Brucculeri, LLP

1 Claim, 2 Drawing Sheets



FIG. 4

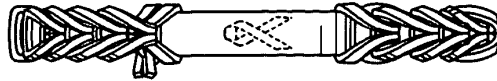


FIG. 2

FIG. 1



FIG. 3



FIG. 5

FIG. 6

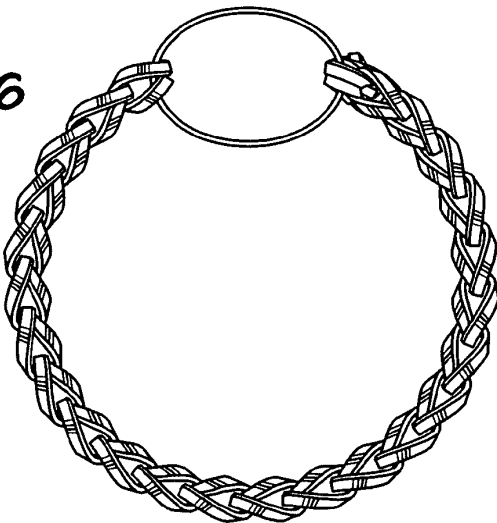


FIG. 10



FIG. 8

FIG. 7



FIG. 9



FIG. 11

FIG. 12



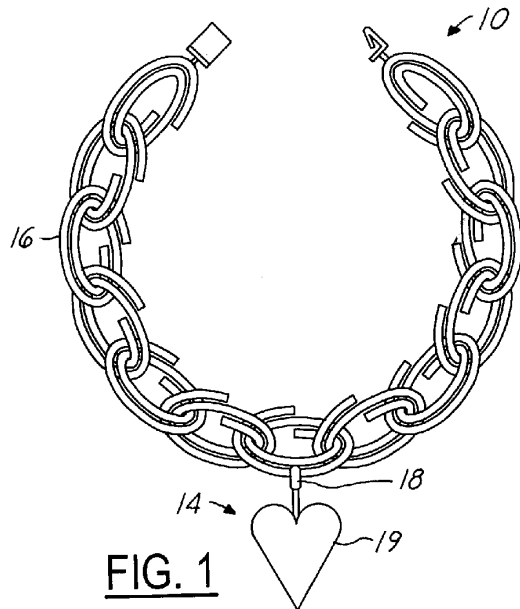


FIG. 1

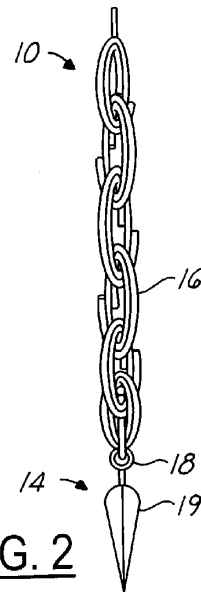


FIG. 2

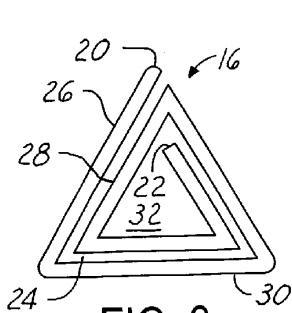


FIG. 3

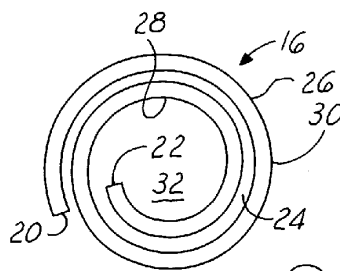


FIG. 4

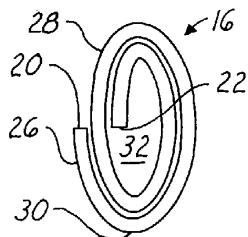


FIG. 5

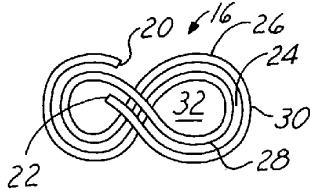


FIG. 6

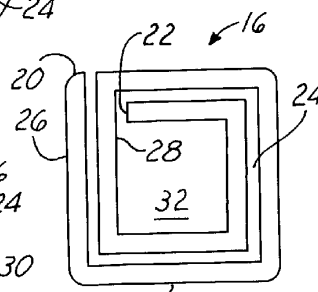


FIG. 7

1

FLEXIBLE PIECE OF JEWELRY**CROSS REFERENCE TO RELATED APPLICATION**

The present application claims priority from U.S. provisional application Ser. No. 60/391,547, filed Jun. 25, 2002, and entitled "A Flexible Charm Bracelet."

TECHNICAL FIELD

The present invention relates generally to jewelry and more specifically to flexible pieces of jewelry.

BACKGROUND OF THE INVENTION

Current charm bracelets are well known. However, in order to add a charm to most current bracelets, a wearer must take the bracelet to a jeweler who will then secure the additional charm thereto, such as through standard soldering methods. This can also require the bracelet to be left with the jeweler. Unfortunately, for many people it can take a good deal of time before they actually get around to taking the bracelet to the jeweler to have the charm added, which can result in loss of full enjoyment of the bracelet with the attached additional charm. Further, soldering also can be disadvantageous because the charm can become separated from the bracelet and lost if the solder joint is weak. This can significantly diminish the sentimental value of the bracelet.

It is thus highly desirable to provide a charm bracelet that allows individuals to easily and securely add charms to a bracelet without the need to take the bracelet to a jeweler. It is also desirable that these charms can be added without the need to damage the bracelet. It would also be desirable to have the ability to add charm links to a charm bracelet easily as the need for a larger bracelet evolves or as additional charms are acquired.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a piece of jewelry that is flexible in that it allows for charms to be readily added without the need to take the piece of jewelry to the jeweler.

It is a further object of the present invention to provide a piece of jewelry that minimizes separation of a charm from the bracelet, by providing a more secure attachment.

In one preferred embodiment, the continuous chain of the piece of jewelry is formed from a plurality of non-continuous bracelet links. Charms are added to one or more of the non-continuous links to form the charm bracelet. This link design allows more non-continuous links to be added to the bracelet as the child grows and the need for a larger bracelet evolves.

The non-continuous bracelet links can take on a variety of shapes, including triangular, circular, square, figure eight shaped or oval. Moreover, the links can be utilized for other pieces of jewelry besides bracelets.

Other objects and advantages of the present invention will become apparent upon considering the following detailed description and appended claims, and upon reference to the accompanying drawings.

2

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a flexible charm bracelet according to a preferred embodiment of the present invention;

FIG. 2 is a side view of FIG. 1;

FIG. 3 is a perspective view of a non-continuous link for a charm bracelet according to a preferred embodiment of the present invention; and

FIGS. 4 through 7 illustrate alternative embodiments of non-continuous links that may be used in addition to or in place of the non-continuous link of FIGS. 1 through 3.

DETAILED DESCRIPTION AND PREFERRED EMBODIMENTS OF THE INVENTION

Referring now to FIGS. 1 and 2, a flexible piece of jewelry, here a charm bracelet, according to a preferred embodiment of the present invention is shown and generally identified by reference numeral 10. The charm bracelet 10 consists of a plurality of non-continuous links 16, which form a continuous chain. The continuous chain is formed by coupling each individual non-continuous link 16 on either side to an adjacent pair of non-continuous links 16 to form the continuous chain. While the shape of each individual non-continuous link 16 is shown herein as being substantially oval shaped, it is understood that the shape of the non-continuous links 16, for purposes of the present invention, is not important and can vary as described below.

Also shown in FIGS. 1 and 2, the bracelet 10 includes a charm 14 having an eyelet portion 18 and a charm portion 19. The eyelet portion is then reversibly coupled to one of the non-continuous links 16. The design of the charm portion 19 may take on many forms having sentimental value to the wearer as is appreciated by those of ordinary skill in the art. It will also be understood that more than one charm 14 can be attached to the bracelet 10.

As best shown in FIG. 3, the non-continuous link 16 is a continuous wire-like segment forming a geometric perimeter. The non-continuous link thus has a first, or outer end 20, and a second, or inner end 22. An overlapping region 24 is defined between a closely coupled outer segment 26 and an inner segment 28 of the continuous wire. A middle region 30 is also defined within the overlapping region 24 that is located approximately in the middle of the overlapping region 24 and preferably midway along the length of the continuous wire between the inner end 22 and outer end 20. A center region 32 is defined within the inner surface of the inner segment 28.

The non-continuous link 16 may be formed of many metal materials, including precious metals such as gold, silver, or platinum. The links 16 may also be formed of strong, pliant non-metallic materials such as plastic. The links 16 can also be formed of a variety of other suitable materials. Further, the cross-sectional shape of the segments of the link 16 may take on a wide of shapes.

The charm 14 is introduced to the non-continuous link 16 by introducing the eyelet 18 around the outer end 20 of the non-continuous chain 16 and sliding it along the outer segment 26 towards the middle region 30. The eyelet 18 is then slid along the closely coupled outer segment 26 and into the overlapping region 24 to retain the eyelet 18. As this occurs, the inner segment 28 is forced inward by the eyelet 18 towards the center region 32 and away from the outer segment 26. The eyelet 18 continues to move along the outer segment 26 to the middle region 30. The charm 14 is then

reversibly retained within the middle region 30 between the inner segment 28 and the outer segment 26 of the non-continuous link 16.

To remove the charm 14 from the non-continuous link 16, simply reverse the process by moving the eyelet 18 from the middle region 30 along the outer segment 26 towards the outer end 20. The eyelet 18 then moves towards the outer end 20 and off of the non-continuous link 16, at which time the inner segment 28 springs back towards the outer segment 26.

Alternatively, the charm 14 could be introduced to the non-continuous link 16 by introducing the eyelet 18 around the inner end 22 of the non-continuous chain 16 and sliding it along the inner segment 26 and into the overlapping region 24. As this occurs, the outer segment 26 is forced outward away from the center region 32 and the inner segment 28. The eyelet continues to move along the inner segment 28 to the middle region 30. The charm 14 is then reversibly retained within the middle region 30 between the inner segment 28 and outer segment 26 of the non-continuous link 16.

While the non-continuous link 16, as shown in FIGS. 1 through 3, is illustrated as being substantially triangular shaped, the overall design of the non-continuous link 16 may take on many different geometric and non-geometric configurations, as one of ordinary skill in the art would recognize. For example, as shown in FIG. 4, the non-continuous link 16 may be circular. Similarly, as shown in FIG. 5, the non-continuous link 16 is illustrated as oval shaped or, as shown in FIG. 6, the non-continuous link may have a FIG. 8 configuration, or, as shown in FIG. 7, the non-continuous link 16 may be square shaped.

The method for coupling non-continuous links 16 together accomplished by first reversibly securing one non-continuous link to an adjacent non-continuous link 16 by pressing a portion of one of the non-continuous links 16 between the outer segment 26 and the inner segment 28 of the overlapping region 24 at a location near the outer end 20 of an adjacent non-continuous link 16. At this point, the outer segment 26 and inner segment 28 move away from each other and define an open position. The link 16 is then passed through the middle region 30 and towards the inner end 22. The link 16 then passes out of the overlapping region 24 at the inner end 22 and into the central region 32. The non-continuous link 16 is then retained within the central region 32 of the adjacent non-continuous link 16. The process is then repeated by reversibly coupling another non-continuous link 16 to one of the two reversibly coupled links 16 to form a chain of reversibly coupled links 16. The end links, or first and second outermost non-continuous links 16, of the chain are then reversibly coupled with each other to form a continuous chain.

The overall size of the flexible charm bracelet 50 thus depends upon the number of reversibly coupled links 16 coupled within the continuous chain. To increase the size of the charm bracelet 50 of FIG. 1, adjacent links 16 in the continuous chain are uncoupled and an additional non-continuous link 16 is added between the two uncoupled adjacent links 16 to form a new larger continuous chain. Similarly, to decrease the size of the charm bracelet 50, simply reverse the process.

As one of ordinary skill would thus appreciate, the present invention introduces a simple method for adding or removing charms 14 from a charm bracelet or for increasing or

decreasing the size of a charm bracelet easily and quickly without the use of a jeweler. Further, the non-continuous link 16 design addresses problems in the prior art associated with physically damaging the charm bracelet in order to add additional charms.

Further, while the invention as described in FIGS. 1-6 above depict a charm bracelet, it is understood by those of ordinary skill that the non-continuous link design may be used in forming other kinds of jewelry. For example, a charm necklace may be formed from the non-continuous links 16 and charms 14 as described in FIGS. 1-6. Also, the present invention may be incorporated into other items of interest not specifically related to the jewelry industry. For example, industrial chain applications may utilize one or more of the non-continuous links 16 described above.

While the invention has been described in terms of preferred embodiments, it will be understood, of course, that the invention is not limited thereto since modifications may be made by those skilled in the art, particularly in light of the foregoing teachings.

What is claimed is:

- 1. A flexible piece of jewelry comprising:
 - a continuous chain comprising a plurality of non-continuous chain links, wherein each of said plurality of said non-continuous chain links comprises a continuous wire-like segment having an outer end, an outer segment extending from said outer end, an inner end, and an inner segment extending from said inner end and defining a central region, said inner segment being closely coupled to said outer segment and defining an overlapping region, said continuous wire-like segment extending from said outer end to said inner end;
 - wherein each non-continuous chain link of said plurality of non-continuous chain links is coupled at either end to an adjacent one of said plurality of non-continuous chain links; and
 - a charm reversibly coupled onto and around said continuous wire-like segment of one of plurality of said non-continuous links at either said inner end or said outer end and within said overlapping region such that said charm displaces said inner segment away from said outer segment and towards said central region.
- 2. The flexible piece of jewelry of claim 1, wherein said non-continuous link comprises a continuous wire-like segment having a first geometric shape.
- 3. The flexible piece of jewelry of claim 2, wherein said first geometric shape is selected from the group consisting of oval shaped, round shaped, square shaped, triangular shaped and figure eight shaped.
- 4. The flexible bracelet of claim 1, wherein said charm comprises an eyelet portion and a charm portion.
- 5. The flexible bracelet of claim 4, wherein said eyelet portion is reversibly coupled onto and around said continuous wire-like segment of one of plurality of said non-continuous links at either said inner end or said outer end and within said overlapping region such that said eyelet portion displaces said inner segment away from said outer segment and towards said central region.
- 6. The flexible bracelet of claim 1, wherein each non-continuous chain link of said plurality of non-continuous chain links is reversibly coupled at either end to an adjacent one of said plurality of non-continuous chain links.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,040,120 B2
APPLICATION NO. : 10/405023
DATED : May 9, 2006
INVENTOR(S) : Roxanne M. Hunter


Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Insert item [76], Inventor's Middle Initial: Delete "A." replace with "M."

Signed and Sealed this

Eighteenth Day of July, 2006

A handwritten signature in black ink on a light gray dotted background. The signature reads "Jon W. Dudas" in a cursive style.

JON W. DUDAS
Director of the United States Patent and Trademark Office



US008418434B1

(12) **United States Patent**
Carruth et al.

(10) **Patent No.:** **US 8,418,434 B1**
(45) **Date of Patent:** **Apr. 16, 2013**

(54) **FASHION ACCESSORY OF INTEGRATED CONTINUOUS UNITS AND METHODS OF MAKING THEREOF**

(76) Inventors: **Jack Carruth**, Woodstock, GA (US);
Danielle Carruth, Woodstock, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 35 days.

(21) Appl. No.: **13/177,180**

(22) Filed: **Jul. 6, 2011**

Related U.S. Application Data

(60) Provisional application No. 61/361,990, filed on Jul. 7, 2010.

(51) **Int. Cl.**
F16G 13/16 (2006.01)
F16G 15/12 (2006.01)

(52) **U.S. Cl.**
USPC **59/83**; 59/80; 59/85; 59/90; D11/12; D11/13

(58) **Field of Classification Search** 59/78, 80, 59/82, 83, 84, 85, 90, 91, 92; D11/3, 12, D11/13
See application file for complete search history.

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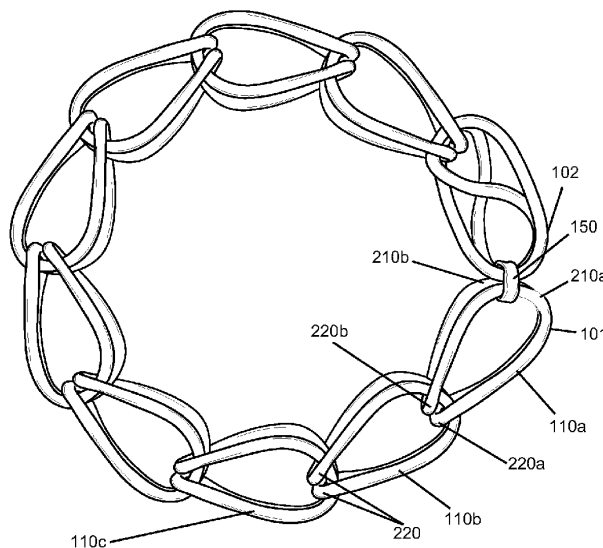
* cited by examiner

Primary Examiner — David B Jones

(57) **ABSTRACT**

A fashion accessory featuring a plurality of units connected together to form a continuous chain having a first end and a second end. The first end and second end are connected together via a locking means. Each unit is a loop. The units each occupy a folded configuration. In the folded configuration, the unit is folded in half to form a first top arc and a second top arc that are positioned next to each other, and a first bottom hook and a second bottom hook that are positioned across from each other. Adjacent units are fed through both bottom hooks and subsequently moved to occupy the folded configuration.

8 Claims, 2 Drawing Sheets



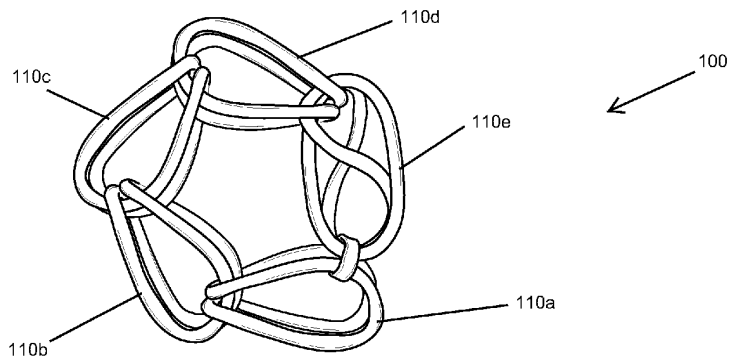


FIG. 1

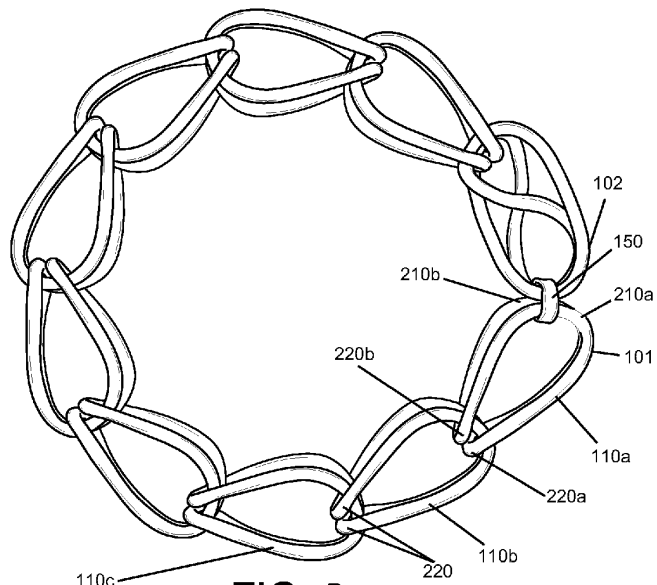


FIG. 2

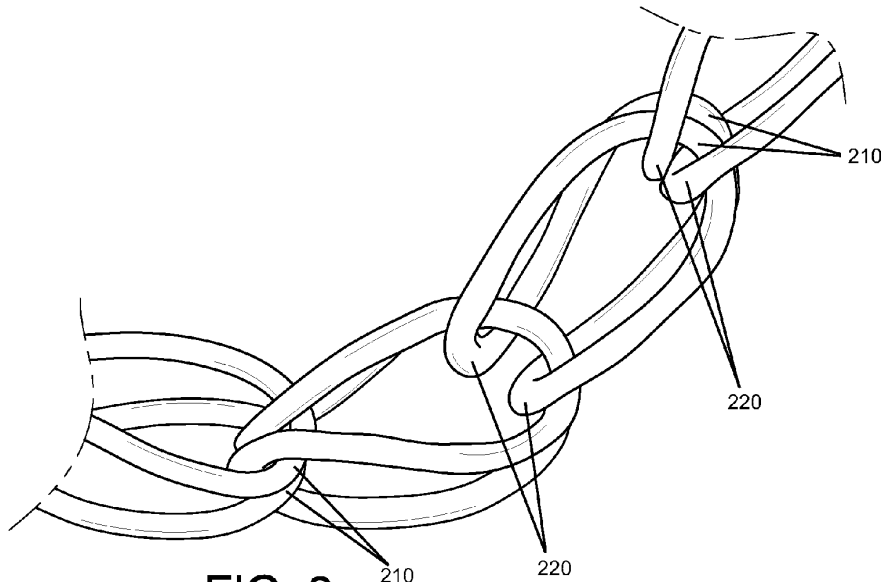


FIG. 3

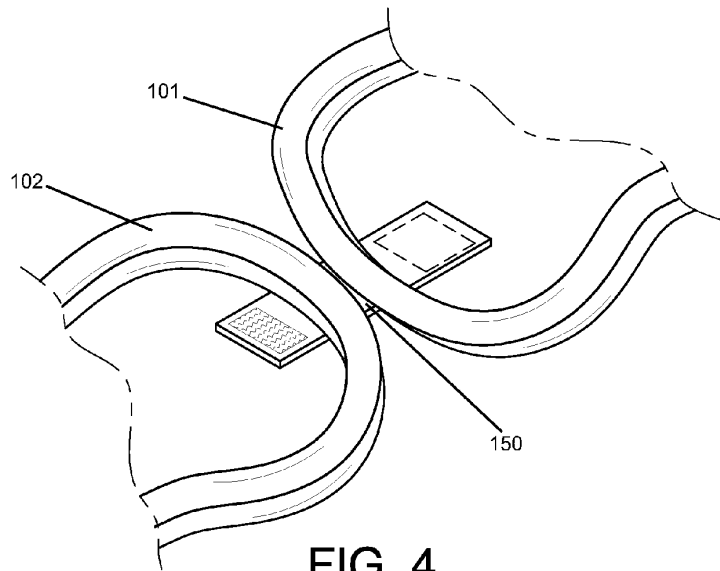


FIG. 4

1

**FASHION ACCESSORY OF INTEGRATED
CONTINUOUS UNITS AND METHODS OF
MAKING THEREOF**

CROSS REFERENCE

This application claims priority to U.S. provisional application Ser. No. 61/361,990 filed Jul. 7, 2010, the specification of which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

The present invention is directed to a fashion accessory, more particularly to an accessory made from integrated continuous units.

BACKGROUND OF THE INVENTION

The present invention features a novel fashion accessory, which may be used for a variety of purposes and applications. For example, in some embodiments, the accessory of the present invention is used as a necklace, a bracelet, an anklet, a dog collar, a luggage tag holder, a headband, a hatband, an eyeglasses holder, a backpack accessory, a keychain, the like, or a combination thereof. The present invention is in no way limited to the aforementioned applications.

Any feature or combination of features described herein are included within the scope of the present invention provided that the features included in any such combination are not mutually inconsistent as will be apparent from the context, this specification, and the knowledge of one of ordinary skill in the art. Additional advantages and aspects of the present invention are apparent in the following detailed description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a fashion accessory of integrated continuous units and methods of making thereof.

FIG. 2 is a top view of a fashion accessory of integrated continuous units and methods of making thereof.

FIG. 3 is an exploded view of a fashion accessory of integrated continuous units and methods of making thereof.

FIG. 4 is an alternate embodiment of a fashion accessory of integrated continuous units and methods of making thereof.

DESCRIPTION OF PREFERRED
EMBODIMENTS

Referring now to FIGS. 1-4, the present invention features a novel fashion accessory **100**. The accessory **100** of the present invention features a plurality of integrated continuous units **110**, in some embodiments geometrically-shaped units. In some embodiments, the units are bands (e.g., similar to hair bands, which are well known to one of ordinary skill in the art).

As used herein, the term “connecting mechanism” refers to any appropriate linking, interlinking, looping, and interlooping of the units **110**.

The accessory **100** of the present invention comprises a plurality of units **110**, for example a first unit **110a**, a second unit **110b**, a third unit **110c**, a fourth unit **110d**, a fifth unit **110e**, etc. In some embodiments, the accessory **100** comprises three or more units **110**. In some embodiments, the accessory **100** comprises four or more units **110**. In some embodiments, the accessory **100** comprises five or more units **110**. In some embodiments, the accessory **100** comprises six

2

or more units **110**. In some embodiments, the accessory **100** comprises seven or more units **110**. In some embodiments, the accessory **100** comprises eight or more units **110**. In some embodiments, the accessory **100** comprises nine or more units **110**. In some embodiments, the accessory **100** comprises ten or more units **110**.

The units **110** are loops. In some embodiments, the units **110** have a generally rounded shape (prior to integration into the accessory), similar to how a hair band has a generally rounded shape. In some embodiments, the units **110** have an alternate general shape, for example a triangular shape, a star shape, a rectangle shape, a pentagon shape, a hexagon shape, an irregular shape, etc. The present invention is not limited to the aforementioned shapes.

In some embodiments, the units **110** are flexible. In some embodiments, the units **110** are rigid. In some embodiments, the units **110** are constructed from a material comprising elastic, allowing for the units **110** to stretch.

In some embodiments, a decorative component is disposed on one or more of the unit **110**. Decorative components are well known to one of ordinary skill in the art. For example, in some embodiments, the decorative component is glitter, a bead, a sticker, a flower, a bow, a key ring, a luggage tag, a dog tag, a locket, a picture, a glow-in-the dark component, the like, or a combination thereof. The present invention is not limited to the aforementioned decorative components. The decorative components may be directly or indirectly attached to the units **110**.

The units **110** are interlocked to form a continuous chain (e.g., via a connecting mechanism). For example, as shown in FIG. 3, to form the chain, a first unit **110a** is folded (e.g., in half) in a folded configuration, wherein the folded configuration has a first top arc **210a** and a second top arc **210b** that are positioned next to each other, and a first bottom hook **220a** and a second bottom hook **220b**, wherein the bottom hooks **220** are positioned across from each other. A second unit **110b** is fed through both bottom hooks **220** of the first unit **110**, then the second unit **110b** is folded to the folded configuration (as described above). A third unit **110c** is fed through both bottom hooks **220** of the second unit **110**, then the third unit **110c** is folded to the folded configuration (as described above). Additional units **110** are added as described until a desired length or number of units **110** is achieved.

When the units **110** are interlocked to form a continuous chain, the accessory has a first end **101** and a second end **102**. The first end **101** and second end **102** can be connected together via a locking means **150**. The locking means **150** may be one or more of any securing or locking devices well known to one of ordinary skill in the art, for example a mating-type engagement, e.g., a clip mechanism, a snap mechanism, a hook mechanism, a latch mechanism, a magnet mechanism, a hook-and-loop fastener mechanism, the like, or a combination thereof. Other similar mechanisms are well known to one of ordinary skill in the art. In some embodiments, the ends **101**, **102** are temporarily connected together or permanently connected together.

As used herein, the term “about” refers to plus or minus 10% of the referenced number. For example, an embodiment wherein the accessory **100** is about 10 inches in length as measured from the first end **101** to the second end **102** includes an accessory **100** that is between 9 and 11 inches in length.

The disclosures of the following U.S. Patents are incorporated in their entirety by reference herein: U.S. Design Pat. No. D450614; U.S. Pat. No. 6,880,364; U.S. Pat. No. 7,040,120; U.S. Pat. No. 7,293,429; U.S. Design Pat. No. D592537;

U.S. Patent Application No. 2002/0043077; U.S. Patent Application No. 2008/0190137; U.S. Patent Application No. 2009/0255295.

EXAMPLE 1

Construction

Example 1 describes an example of constructing the accessory **100** of the present invention. In some embodiments, the accessory **100** of the present invention is constructed by linking the units **110** through a predetermined looping or linking guide; however, the present invention is not limited to this manufacturing or construction process or method. The guide may, for example, comprise a linear device continuous from a first end and a second end, wherein the first end and the second end are each open ends of the guide. The guide may be replaced with any other type device that services the same function as would be evident and obvious to those of ordinary skill in the art.

In some embodiments, a first unit **110a** is placed against the guide such that the first unit **110a** is folded substantially or in part back over on itself over a dominant axis of the guide, thereby creating a smaller area of overlapping enclosed space within the band when viewing from an axis perpendicular to the fold and where such enclosed space is also partially defined by the guide (e.g., or if not guide is used, defined partially by the axis of the fold). A second unit **110b** is then placed through such newly created smaller interior space of the first unit **110a** and the second band **110b** is similarly folded upon itself to create a smaller interior space while partially remaining within the smaller created interior space of the first unit **110a**, thereby linking the first unit **110a** and the second unit **110b** without compromising the continuity of the units **110**. A third unit **110c** is then placed within the newly created smaller interior space of the second unit **110b** along the same method as previously described. Similarly, the third unit **110c** is then folded upon itself while still remaining partially enclosed within the smaller created enclosed interior space of the second unit **110b**. More units **110** can be added depending on the desired length for the article.

When the desired length and/or desired number of units **110** has been achieved, the accessory **100** has a first end **101** and a second end **102**. The first end **101** and the second end **102** can be connected via a locking means **150**. The locking means **150** may be one or more of any securing or locking devices well known to one of ordinary skill in the art, for example a mating-type engagement, e.g., a clip mechanism, a snap mechanism, a hook mechanism, a latch mechanism, a magnet mechanism, a hook-and-loop fastener mechanism, the like, or a combination thereof. Other similar mechanisms are well known to one of ordinary skill in the art.

Various modifications of the invention, in addition to those described herein, will be apparent to those skilled in the art from the foregoing description. Such modifications are also intended to fall within the scope of the appended claims. Each reference cited in the present application is incorporated herein by reference in its entirety.

Although there has been shown and described the preferred embodiment of the present invention, it will be readily apparent to those skilled in the art that modifications may be made thereto which do not exceed the scope of the appended claims. Therefore, the scope of the invention is only to be limited by the following claims.

The reference numbers recited in the below claims are solely for ease of examination of this patent application, and are exemplary, and are not intended in any way to limit the

scope of the claims to the particular features having the corresponding reference numbers in the drawings.

What is claimed is:

1. A fashion accessory (**100**) comprising a plurality of units (**110**) connected together to form a continuous chain having a first end (**101**) and a second end (**102**), the first end (**101**) and second end (**102**) are connected together via a locking means (**150**), wherein a unit (**110**) is a generally round loop that is elastic and flexible, wherein the units (**110**) each occupy a folded configuration, in the folded configuration the unit (**110**) is folded in half to form a first top arc (**210a**) and a second top arc (**210b**) that are positioned next to each other, and a first bottom hook (**220a**) and a second bottom hook (**220b**) that are positioned across from each other, wherein adjacent units (**110**) are fed through both bottom hooks (**220**) and subsequently moved to occupy the folded configuration; wherein the unit (**110**) is a flexible, elastic hair band.

2. The accessory (**100**) of claim 1 comprising six or more units (**110**).

3. The accessory (**100**) of claim 1 comprising eight or more units (**110**).

4. The accessory (**100**) of claim 1 comprising ten or more units (**110**).

5. The accessory (**100**) of claim 1 comprising twelve or more units (**110**).

6. The accessory (**100**) of claim 1, wherein a decorative component is disposed on one or more of the units (**110**).

7. A fashion accessory (**100**) consisting of a plurality of units (**110**) connected together to form a continuous chain having a first end (**101**) and a second end (**102**), the first end (**101**) and second end (**102**) are connected together via a locking means (**150**), wherein a unit (**110**) is a generally round loop that is elastic, and flexible, wherein the units (**110**) each occupy a folded configuration, in the folded configuration the unit (**110**) is folded in half to form a first top arc (**210a**) and a second top arc (**210b**) that are positioned next to each other, and a first bottom hook (**220a**) and a second bottom hook (**220b**) that are positioned across from each other, wherein adjacent units (**110**) are fed through both bottom hooks (**220**) and subsequently moved to occupy the folded configuration;

wherein the unit (**110**) is a flexible, elastic hair band.

8. A method of forming a novel fashion accessory (**100**) from a plurality of flexible, elastic hair band units (**110**) comprises:

(a) obtaining a plurality of units (**110**);

(b) folding a first unit (**110a**) in half to a folded configuration, wherein the folded configuration has a first top arc (**210a**) and a second top arc (**210b**) that are positioned next to each other, and a first bottom hook (**220a**) and a second bottom hook (**220b**) that are positioned across from each other;

(c) feeding a second unit (**110b**) through the first bottom hook (**220a**) and the second bottom hook (**220b**) of the first unit **110**;

(d) folding the second unit (**110b**) to the folded configuration;

(e) feeding a third unit (**110c**) through the first bottom hook (**220a**) and the second bottom hook (**220b**) of the second unit (**110**);

(f) folding the third unit (**110c**) to the folded configuration;

(g) repeating the steps (c) through (f) of feeding, then folding, for additional unit (**110**) until a desired length or number of units (**110**) is achieved, wherein the units **110** are interlocked to form a continuous chain, wherein the accessory has a first end **101** and a second end **102**;

5

(h) connecting the first end (101) and the second end (102) together via a locking means (150).

* * * * *

6

(12) UK Patent Application (19) GB (11) 2 147 918 A

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None
(58) Field of search
D1C

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(54) Knitting apparatus

(57) Apparatus for hand knitting comprises hooked pins 5 arranged in two spaced parallel rows on a frame 1 with a slot 3 between the rows for the passage of knitted material. The pins 5 are formed with grooves 7 to receive a knitting hook and to facilitate the entry of the latter into the grooves sloping surfaces 11 of the frame are formed with lead-in grooves 3. In an alternative embodiment the pins which comprise base members forming the lead-in grooves are independently and detachably clipped onto longitudinal bars of the frame. The frame may have selectable detent positions round pivots 15.

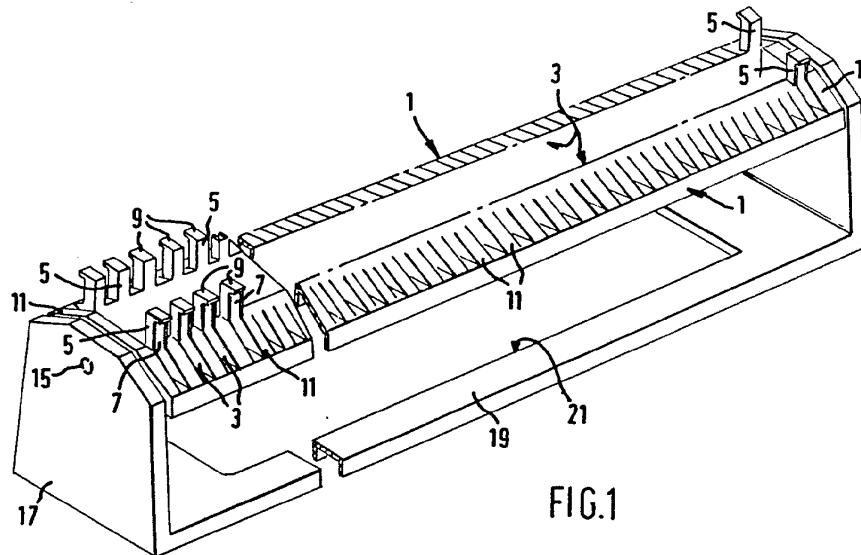


FIG.1

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The drawing originally filed was informal and the print here reproduced is taken from a later filed formal copy.

LaRose Exh. 1015, p. 1

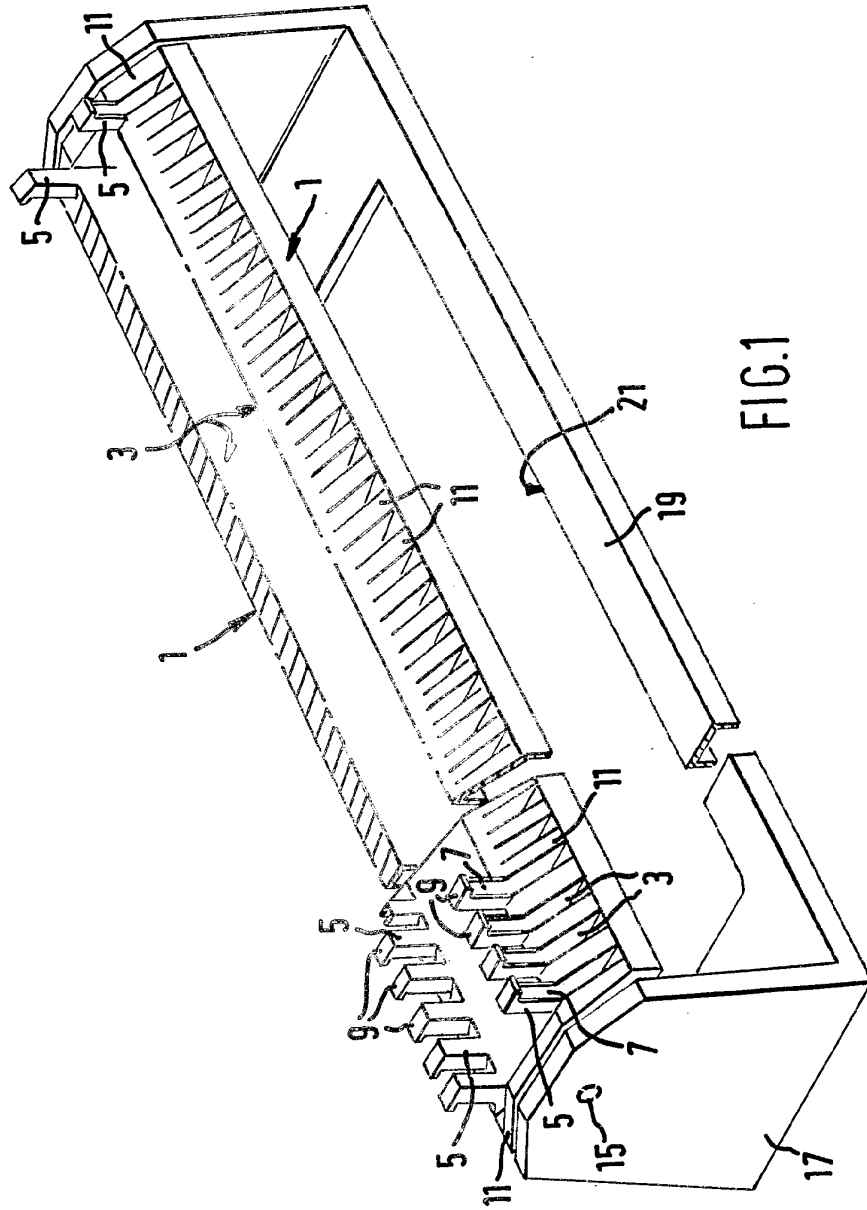


FIG. 1

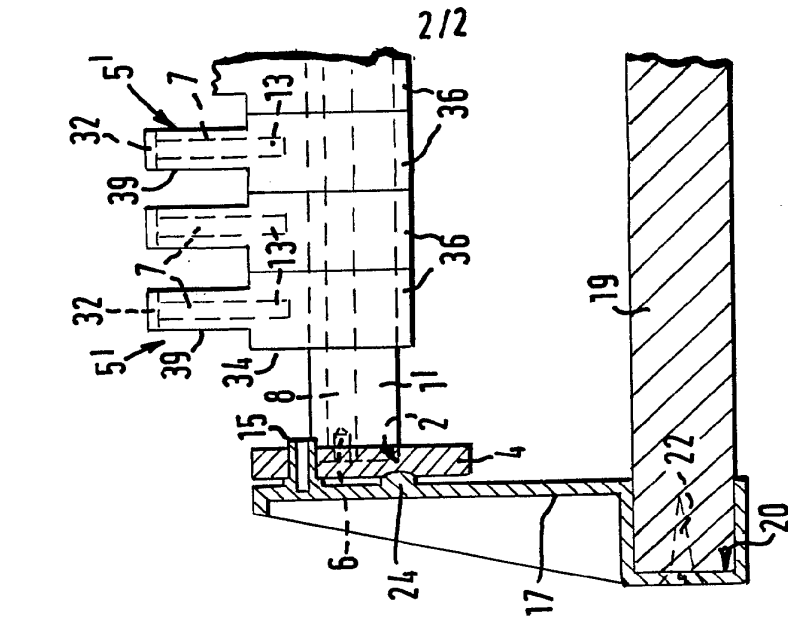


FIG. 2

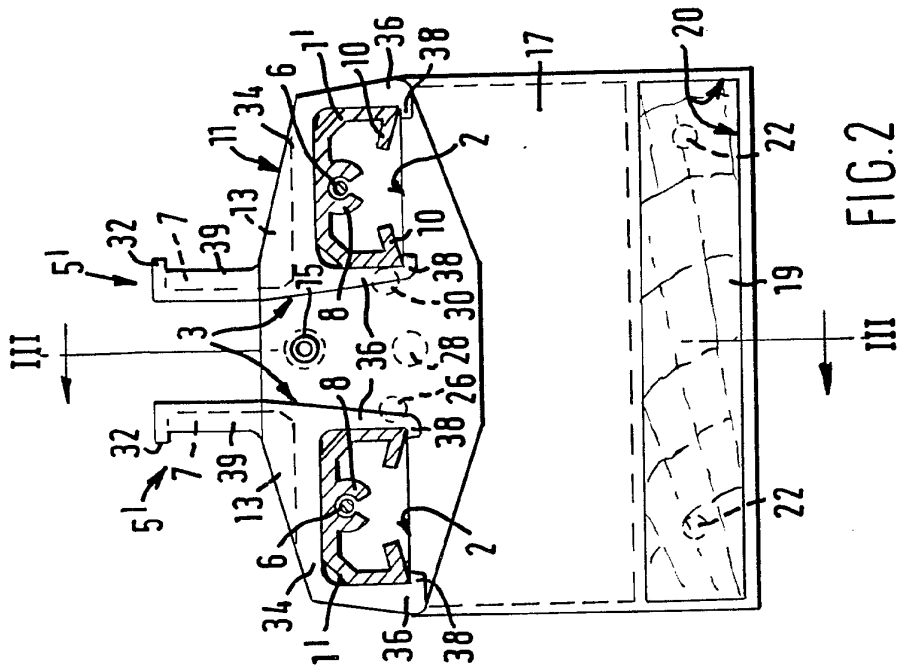


FIG. 3

SPECIFICATION

Knitting apparatus

5 This invention is concerned with knitting apparatus particularly apparatus for knitting by hand.

10 It is known to provide a knitting apparatus (particularly for use by children) comprising an elongate frame member, conveniently made of plastics material, having a slot extending lengthwise of the frame member (the slot extending completely through the frame member) and the latter being provided with two

15 rows of pins arranged to extend upwardly from the frame member at evenly spaced localities along the opposite sides of the slot. The pins each have a groove extending along the pin at a locality opposite to the slot and the pins have a hooked formation, each hook being formed by a small plate-like member which caps the grooved portion of each pin. In using the known apparatus the wool (or other cord-like material) to be used in the

20 knitting operation is first passed around the required number of upstanding pins in the two rows thereof twice (the free end of the wool being anchored eg. to one of the pins) and, by means of a suitable hand-held hook, the second strand is raised over the hooked portion of each pin in turn to form a stitch loop around each pin. The wool is then laid around the pins again and the loops are lifted over the newly laid strand and the process is

25 repeated to form a knitted fabric which passes downwardly through the slot as the operation proceeds. Conveniently the upstanding pins are spaced from each other by spaces approximately equal to the width of the pins.

30 Attempts have been made to utilise apparatus as just described as an aid to enable handicapped people to knit. However, the known apparatus is flimsy and the frame is likely to bend when gripped. Furthermore,

35 particularly with certain types of disability, the knitter finds it difficult to locate the hook correctly in the groove of each pin in order to engage the stitch loop surrounding that pin. For example a person having poor co-ordination of hand movement is likely to insert the hook through the gap between the adjacent pins instead of into the groove in the pin, so that, when the hook is raised, the stitch loops are pulled off the pins and the stitches are

40 'dropped'.

45 With a view to overcoming or minimising the above-mentioned difficulties, it is proposed to provide a substantially rigid frame member, preferably of die-cast aluminium,

50 with sloping upper faces so formed that the thickness (depth) of the frame member increases from the outside edge to the slot which is surrounded by the upstanding pins. The sloping faces are provided with grooves

55 which lead into the grooves in the correspond-

ing pins thus providing lead-in guides to help the user locate the hook in the grooves in the pins and thus facilitate the formation of the stitches.

70 With a view to providing further improvements in the aforesaid knitting apparatus it is proposed to provide an apparatus in which what are described previously as upstanding (hooked) pins (which pins are integrally

75 formed with a slotted frame-member) are replaced by a plurality of separately formed hooked teeth, which are conveniently manufactured, by an injection moulding technique, from a plastics material, preferably Nylon 6.

80 The teeth are assembled in the apparatus by being clipped over a pair of tooth supporting bars which are arranged to lie parallel to each other and provide, between them, a slot through which the knitting passes. The tooth

85 supporting bars are conveniently made from an extruded aluminium hollow profile of generally rectangular cross-section cut to appropriate length, opposite end portions of the bars being secured in rectangular housings in the form of depressions formed in a pair of

90 end plates, thus providing a rigid tooth-supporting structure of good torsional rigidity and which is unlikely to distort under hand pressure during the knitting operation. The end plates just referred to may conveniently be formed by zinc die-castings.

95 The tooth-supporting structure is conveniently pivotally supported in a support frame in a manner generally similar to that described above. However, with a view to providing for

100 ease of assembly, cheapness of manufacture, and robustness, the support frame preferably comprises a pair of support end plates, again made by a zinc die-casting process and

105 shaped to receive opposite end portions of a wooden base-plate to which the end plates are secured. The end plates are also provided, during the die-casting process, with pivot pins for the tooth-supporting structure and with a locating member for locating the same in one of three different positions of tilt relatively to the support frame.

110 Thus an apparatus in accordance with the present invention may be assembled from a very few cheaply produced, but strong and light, components. Sets of teeth of different pitch may be provided to provide for different sized stitches in knitted articles made on the apparatus. The teeth may be clipped on to the two supporting bars either in staggered or

115 opposed relationship. Gaps may be left between adjacent teeth if required to provide readily for different stitch patterns.

120 There will now be given, with reference to the accompanying drawings, a more detailed description of an apparatus, illustrative of the invention. It is to be clearly understood that this apparatus is selected for description by way of exemplification, and not by way of

125 limitation, of the invention.

130

In the accompanying drawings:

Figure 1 is a perspective view of a first embodiment of apparatus according to the invention having a die-cast aluminium frame:

5 Figure 2 is a cross-sectional view of a second embodiment of the apparatus having replaceable knitting teeth; and

10 Figure 3 is a view, chiefly in longitudinal cross section on the line III-III in Figure 2, of one end portion of the illustrative apparatus.

15 As will be seen in Figure 1, the apparatus comprises an elongate frame member 1, preferably of die-cast aluminium, having a slot 3 extending lengthwise of the frame member, the groove extending completely through the frame member. Upstanding from the frame member, at opposite sides of the slot 3, are two rows of spaced pins 5 having grooves 7 extending lengthwise of the pins (ie. 20 heightwise) at outwardly facing sides thereof. The pins are hooked as shown in the drawing, the hooked formation being provided by small plate-like portions 9 which cap the upper ends of the grooves 7. The frame member 1 is 25 provided with sloping upper surfaces 11 (ie. the depth, or thickness, of the frame member increases from its outside edges to the slot 3) in which are formed grooves 13 leading into the corresponding grooves 7 in the pins 5.

30 The frame member 1 is pivotally supported on pins 15 extending inwardly from upstanding end portions 17 of a support frame having a slot 21 in its base through which the knitted material can pass, and may be locked in one 35 of three positions (either a central position as shown, or inclined somewhat towards one side or the other) for convenience in handling. The locking means comprises a fixed pin (not shown) which extends from one of the up- 40 standing end portions 17 with one of the three locating holes formed in the frame member 1. To release the frame member from the locating pin, the frame member can be displaced lengthwise of its pivot pins 15 against 45 the action of a spring (not shown).

50 It will be appreciated that the grooves 13 leading into the grooves 7 in the pins are likely to facilitate the correct engagement of the knitting hook with the grooves in the pins and the sloping surfaces 11 tend to act as barriers barring unwanted entry of the hook into the spaces between the pins.

55 The apparatus shown in Figures 2 and 3 comprises a plurality of upstanding pins (in the form teeth 5' hereinafter described) which correspond to the pins 5 referred to previously and are arranged in two spaced parallel rows to provide a slot 3 between the rows through which slot the knitted material passes during a 60 knitting operation.

65 In the illustrative apparatus the teeth 5' are detachably supported on a pair of spaced bars 1'. The bars 1' are cut from an extruded aluminium hollow profile having a generally rectangular cross-section as shown in Figure 2

70 to provide a rigid but light construction. Opposite end portions of the bars 1' are received in rectangular recesses or housings 2 (commensurate with the cross-sectional dimensions of the bar so as to provide a tight fit therefor) formed in end plates 4, to which the bars are firmly secured by self-tapping screws 6 extending through bores in the end plates into a split-cylindrical bead 8 provided within each 75 bar 1'. Inwardly directed flanges 10 provide strength to the bar profile. The arrangement described provides a light but strong structure for supporting the teeth 5' which is unlikely to twist or distort during use of the apparatus.

80 The end-plates 4 are pivotally supported on pivots 15 extending from a pair of support end plates 17, these plates being secured to opposite end portions of a wooden base-plate 19 which end portions are received within 85 housings 20 formed in the support end plates 17 and secured by screws 22.

90 The tooth-supporting frame, comprising the bars 1' and the end-plates 4, may be located in a selected one of three possible positions of tilt about the pivots 15, by means of a poppet 24 (Figure 3) extending from one support end plate 17 into one of three detents 26, 28, 30 95 formed in the adjacent end plate 4 (Figure 2). The spacing between the support end plates 17 and the end plates 4 of the tooth-supporting frame is arranged to be such as to allow slight endwise movement of the frame relatively to the pivots 15 to allow disengagement 100 of the poppet 24 for the detents 26, 28, 30, a compression spring (not shown) being provided around the pivot 15 between the end plates 4 and 17 at the opposite end of the apparatus to that shown in Figure 3 to hold 105 the poppet 24 and selected detent in engagement.

110 The support end plates 17 are also conveniently formed by a zinc die-casting process whereby the pivot 15 and detent 24 may be formed integrally with the plates 17 (only 50% of which will be provided with the poppets 24, since they are not required on the plate 17 at the opposite end of the apparatus).

115 As will be clear from Figures 2 and 3 each hook 5' comprises an upwardly extending portion 39 terminating in an upper plate-like overhanging portion 32 providing the hook proper for retaining the wool on the hooks until lifted thereof during the knitting operation by manipulation of a hand-held knitting hook (not shown). For guiding the latter each hook 5' is provided with a groove 7 extending 120 along the upstanding portion 39, while a base portion 34 of each hook has a lead-in guide groove 13 which leads into the groove 7 for the purpose described above in relation to 125 Figure 1. Each base portion 34 is provided with two depending legs 36 having inturned portions 38 arranged to clip around the support bars 1' as shown in Figure 2, and to hold 130

the teeth firmly in place thereon. By springing apart the legs 36 slightly a tooth may be easily detached from its bar, either for repositioning to provide gaps as above-mentioned, or when it is desired to replace the teeth with teeth of a different pitch. Each groove 13 is formed between wall portions of the base portion 34 of each tooth 5' provided with sloping upper surfaces 11 providing barriers between the grooves 13 in adjacent teeth tending to bar unwanted entry of the knitting hook into spaces between the hooks 5' for the purpose described previously.

15 CLAIMS

1. Knitting apparatus comprising an elongate frame member having a slot extending lengthwise of the frame member and completely through the frame member and knitting pins disposed on the frame member at evenly spaced locations in two rows along opposite sides of the slot, the pins extending upwardly from the frame member and being of hooked formation and grooves extending along the pins at locations opposite to the slot for guiding a knitting hook, wherein the frame member is substantially rigid and is formed with sloping upper faces so formed that the depth of the frame member increases from the outside edge to the slot which is surrounded by the upstanding pins, the sloping faces being provided with grooves that lead into grooves in the corresponding pins thus providing lead-in guides that help the user locate the knitting hook in the grooves in the pins and thus facilitate the formation of stitches.
2. Apparatus according to claim 1 wherein the frame comprises longitudinal members and end plates and the end plates are pivoted in a stand, releaseable locking means holding the frame in one of a number of predetermined attitudes relative to the stand.
3. Apparatus according to claim 2, wherein the longitudinal members are defined by bars of non-circular section on which clip removable knitting pins.
4. Apparatus according to claim 3 wherein each knitting pin is moulded in a plastics material and comprises a body, legs depending from ends of the body to clip onto a longitudinal bar and an upstanding hook portion.
5. Apparatus according to claim 4 wherein there are also mounted on the bars dummy pins devoid of hooks.
6. Apparatus according to claim 3, 4 or 5, wherein the releaseable locking means comprises a poppet and detents.
7. Knitting apparatus substantially as hereinbefore described with reference to and as illustrated in Figure 1 or Figures 2 and 3 of the accompanying drawings.

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(12) **United States Patent**
Schaub

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(45) **Date of Patent:** **Nov. 27, 2012**

(54) **MODULAR ADJUSTABLE FRAME HAND LOOM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 107 days.

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(22) Filed: **Apr. 13, 2011**

(65) **Prior Publication Data**

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(52) **U.S. Cl.** **139/29; 139/1 R; 139/11; 139/34**

(58) **Field of Classification Search** **139/1 R, 139/11, 29-34**
See application file for complete search history.

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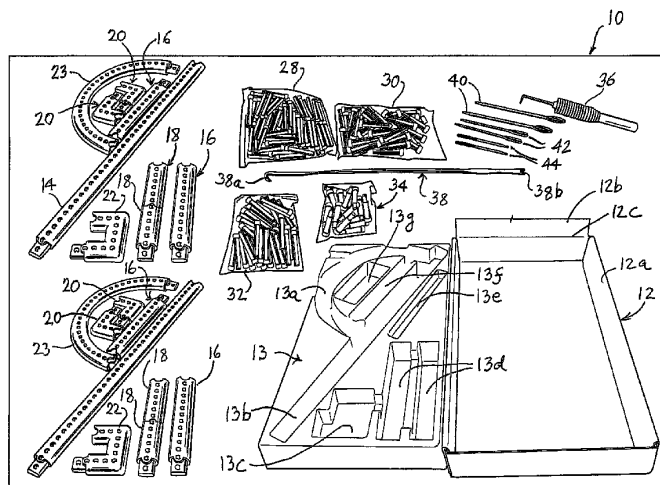
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(57) **ABSTRACT**

An adjustable knitting and weaving hand loom includes differently shaped elongate sections. Tabs and channels connect the sections to form a closed frame by connecting adjoining sections in end-to-end abutment. The tabs and mating channels form sliding joints between adjoining sections. Each of the sections is provided with a series of substantially uniformly spaced holes or bores. End-most holes through the tabs and the channels are aligned when the axial tabs are fully slidably mated within associated axial channels. Pegs are dimensioned to be received both within aligned end-most holes at each slip joint and intermediate holes. The pegs are inserted into aligned end-most bores or holes function both to secure yarn during knitting and to lock the axial tabs from inadvertently separating from mating axial channels by movements along the direction of insertion.

20 Claims, 12 Drawing Sheets



US 8,316,894 B2

Page 2

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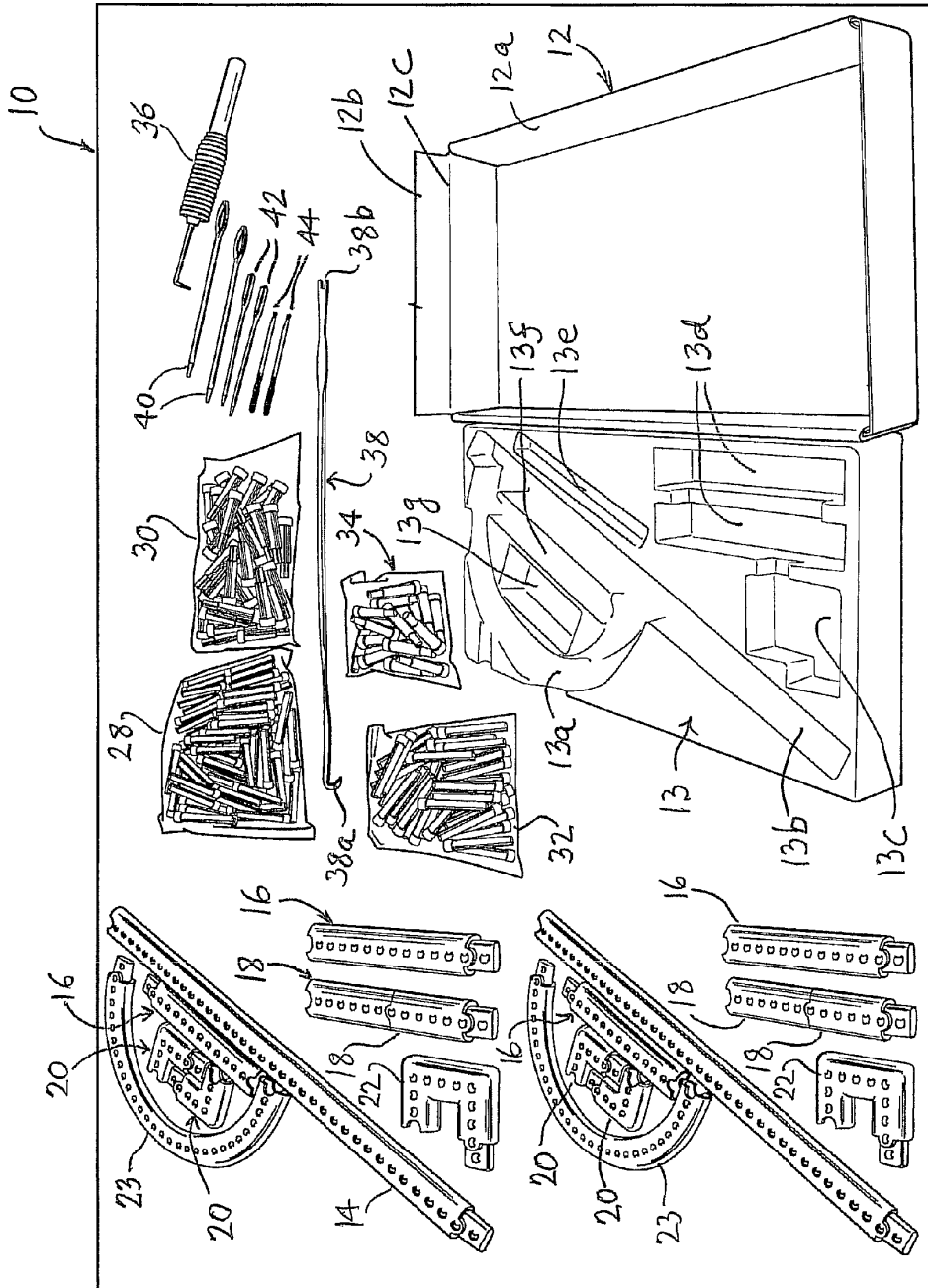
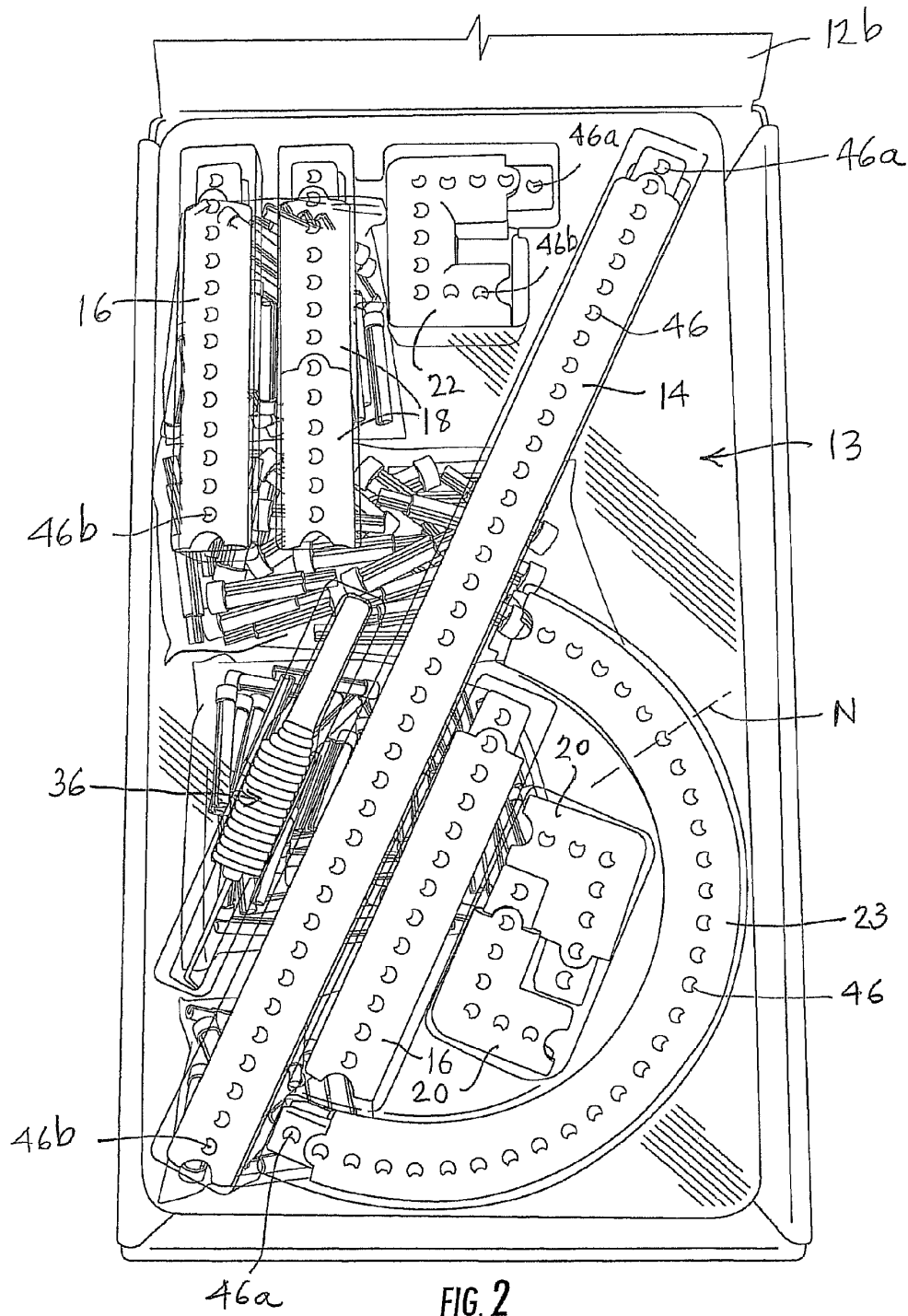
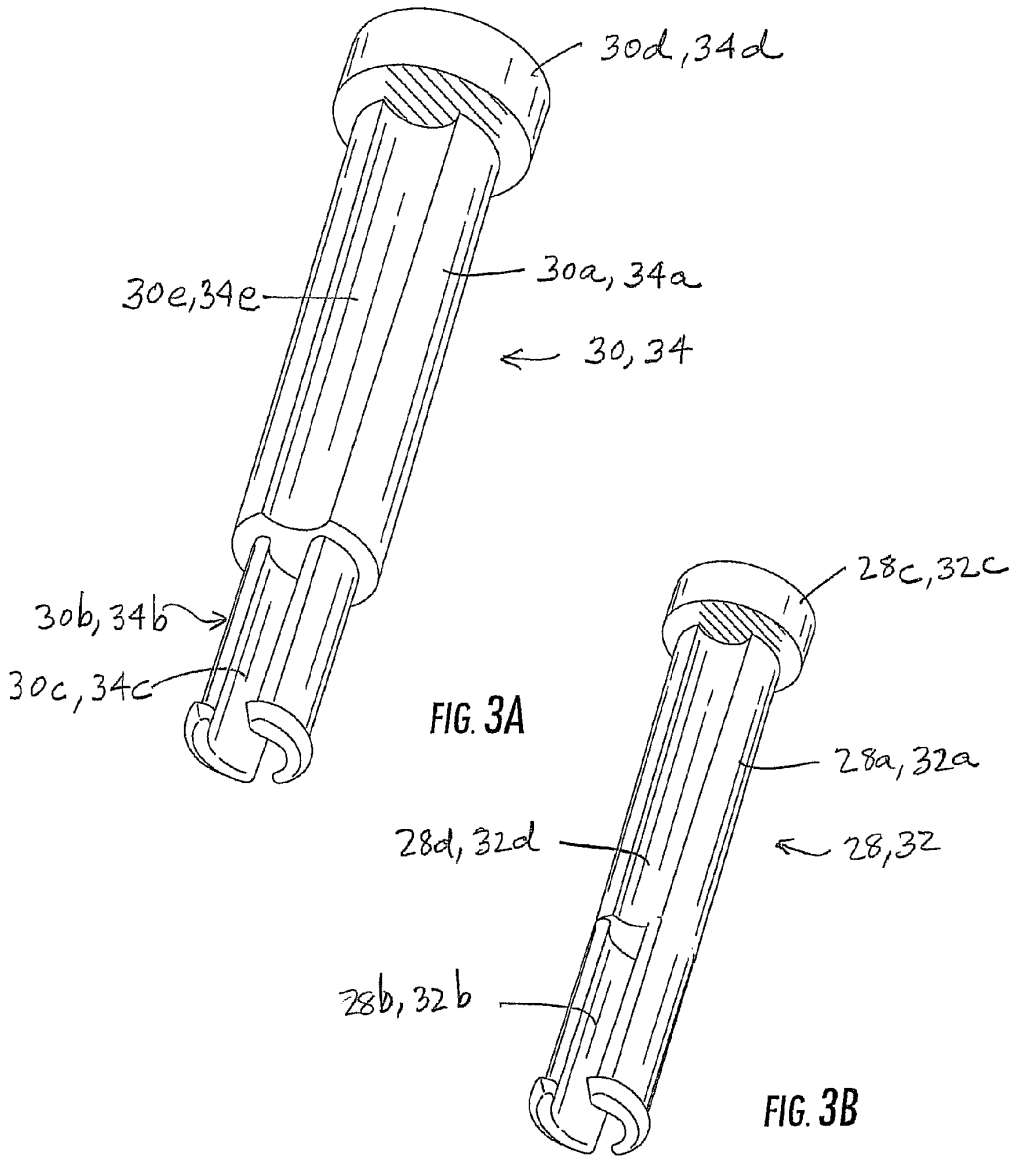


FIG. 7





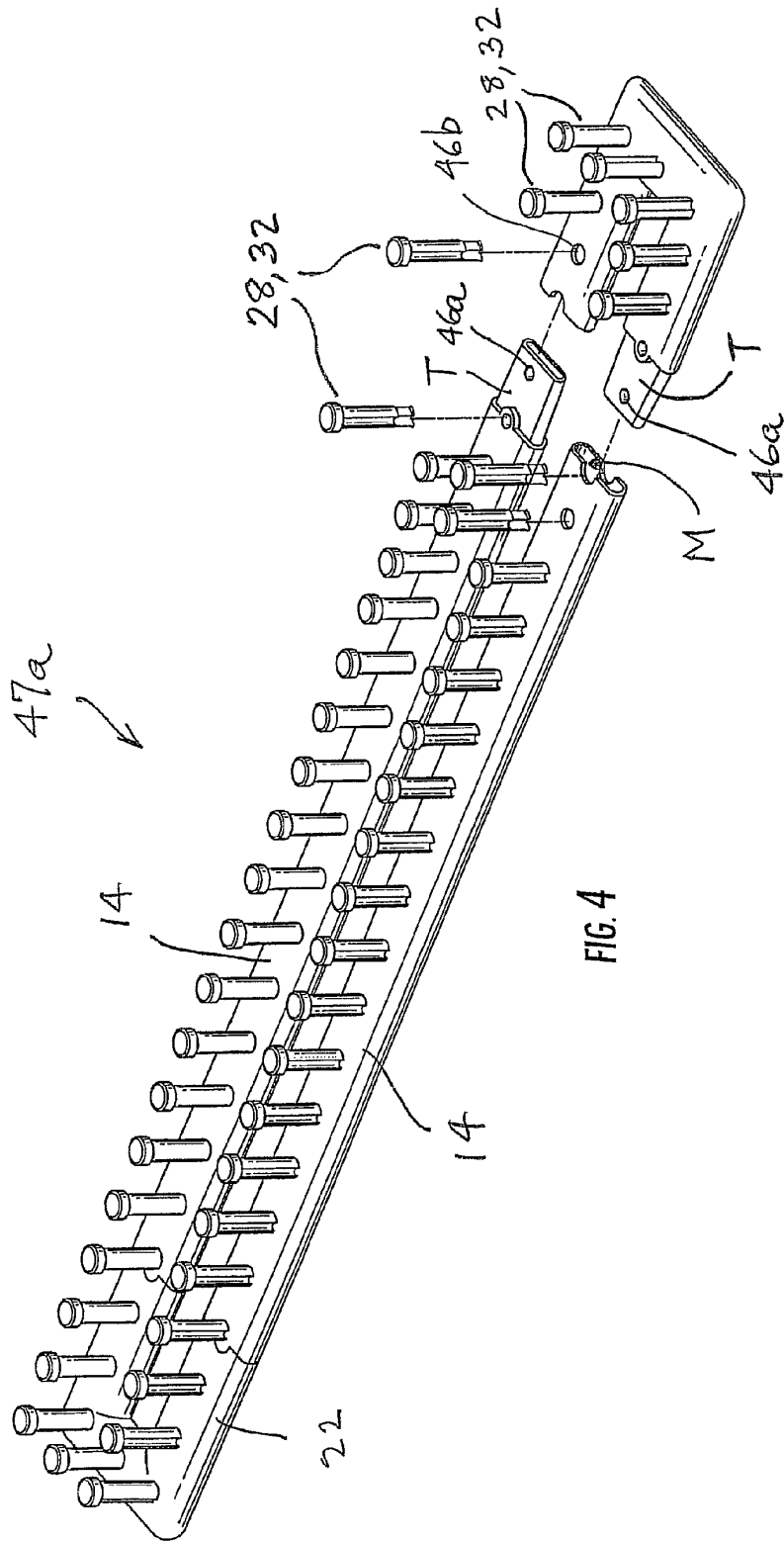
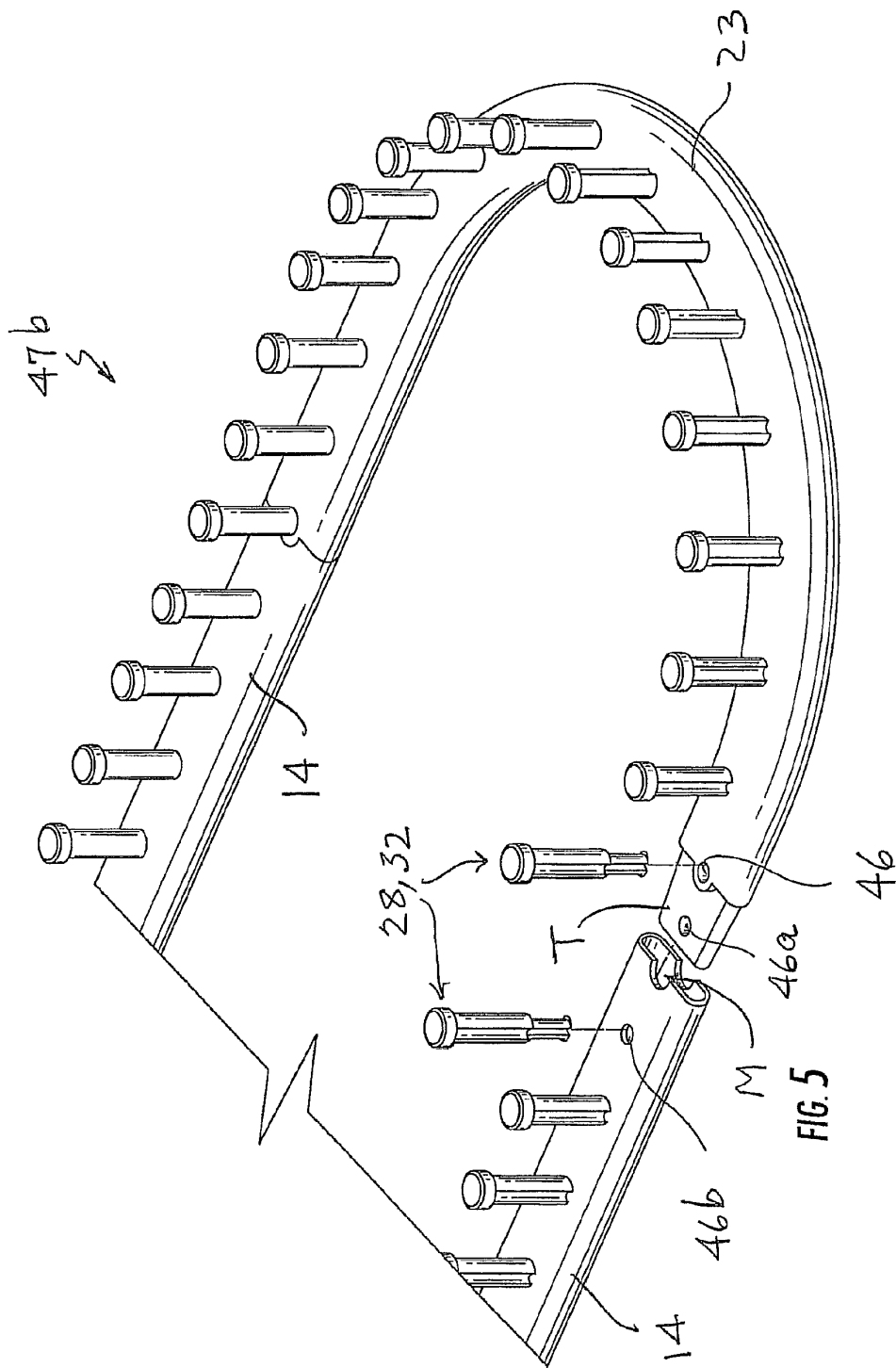


FIG. 4



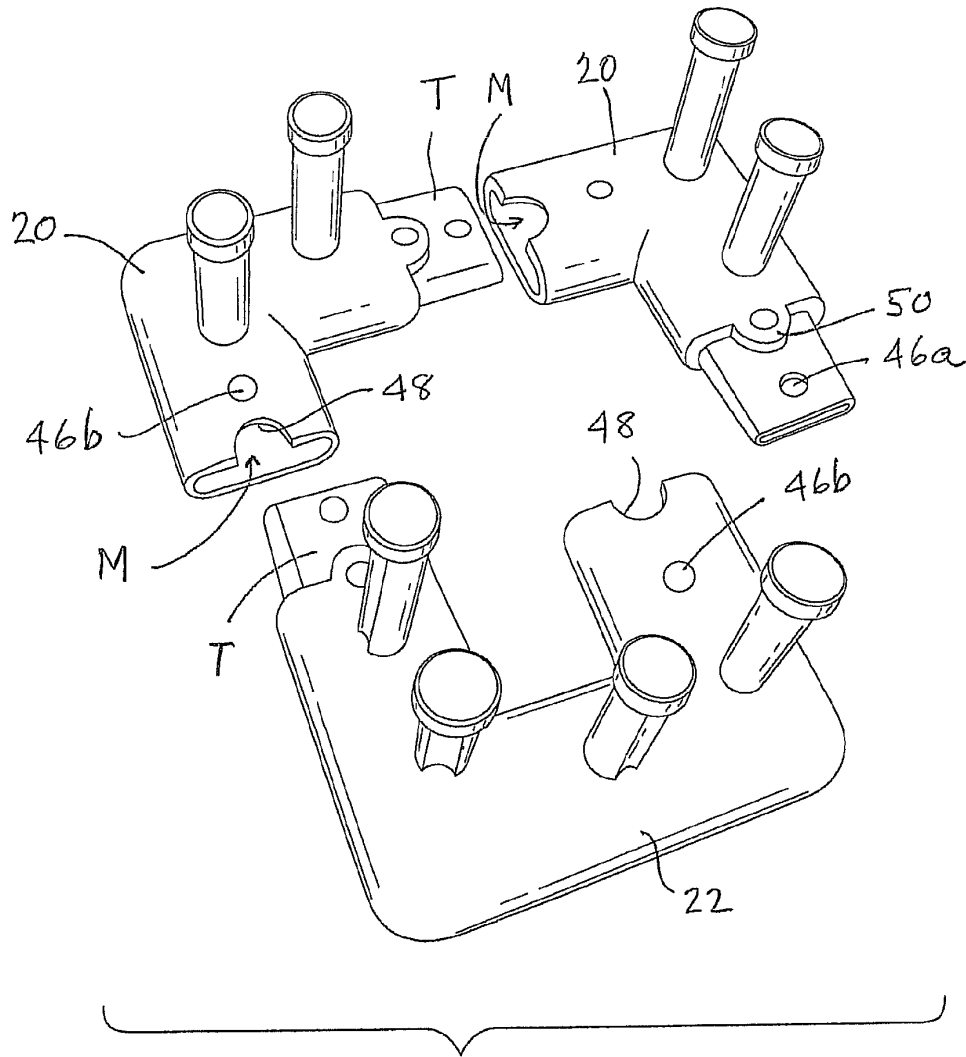


FIG. 6

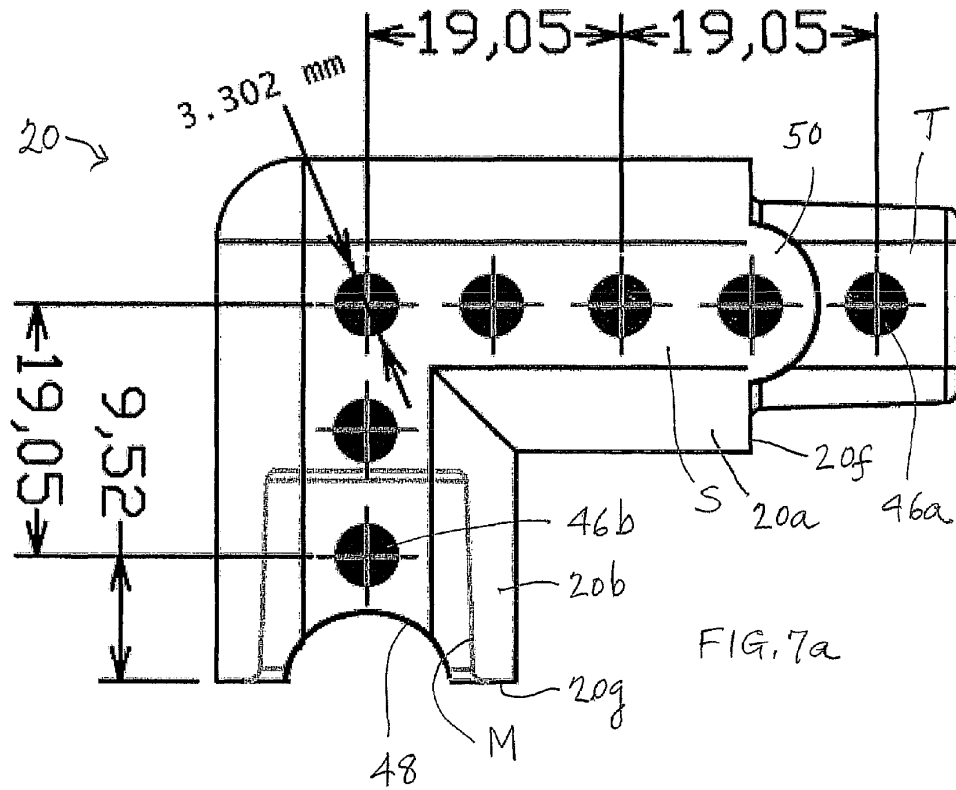
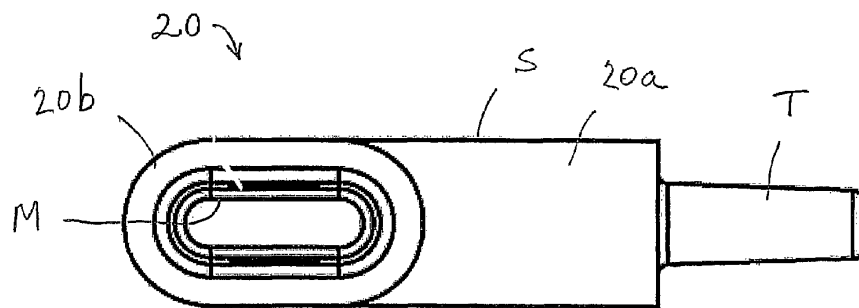
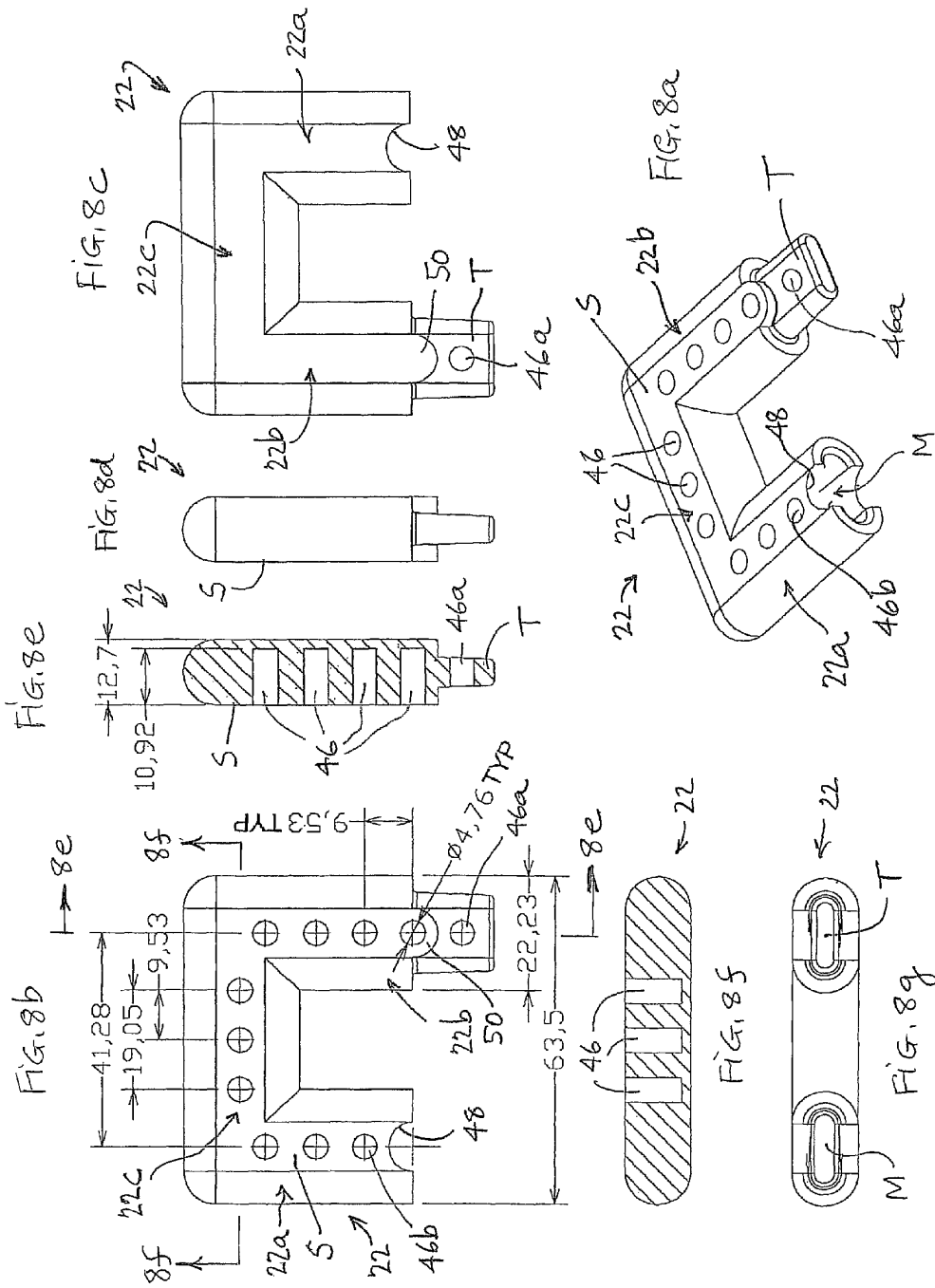
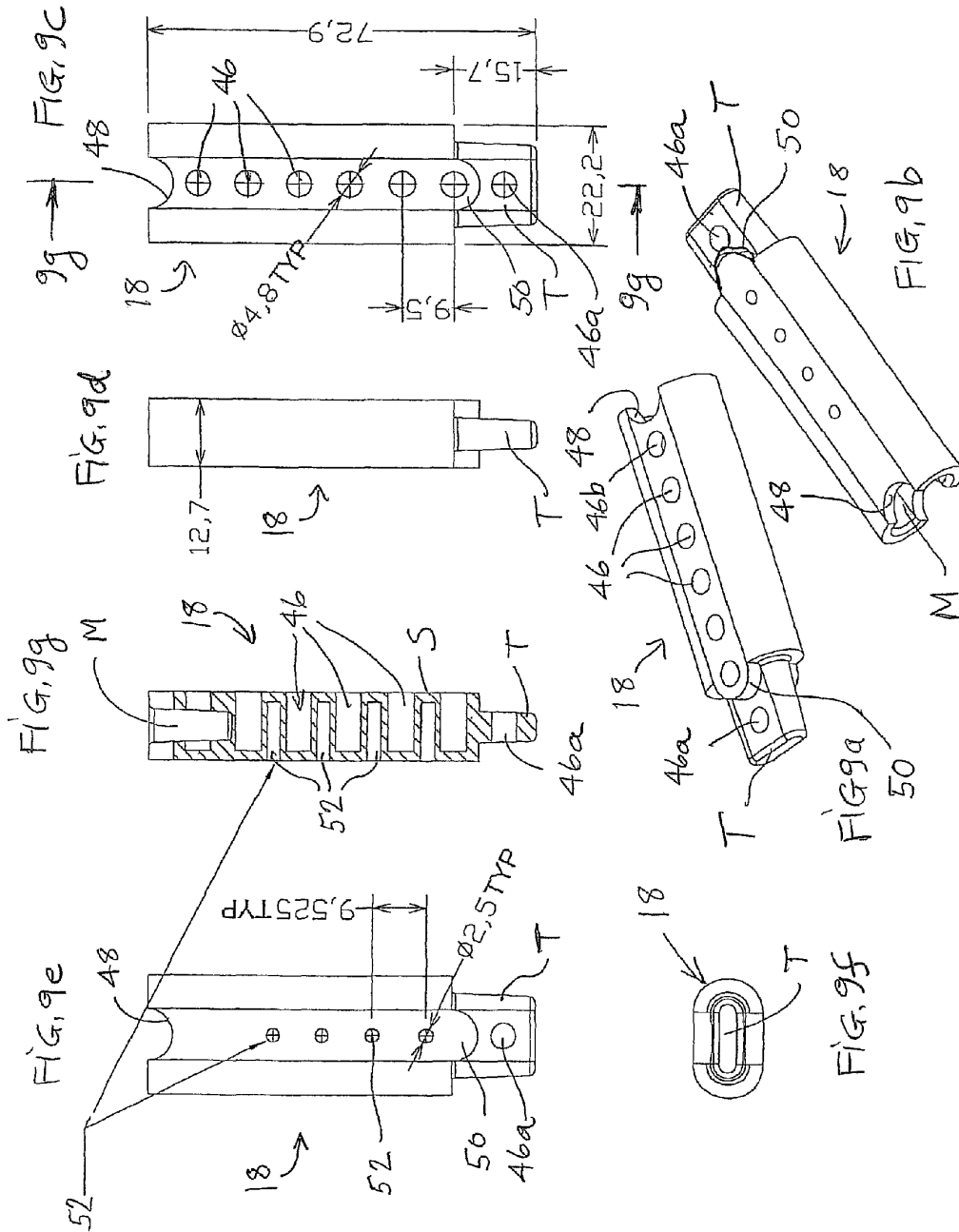
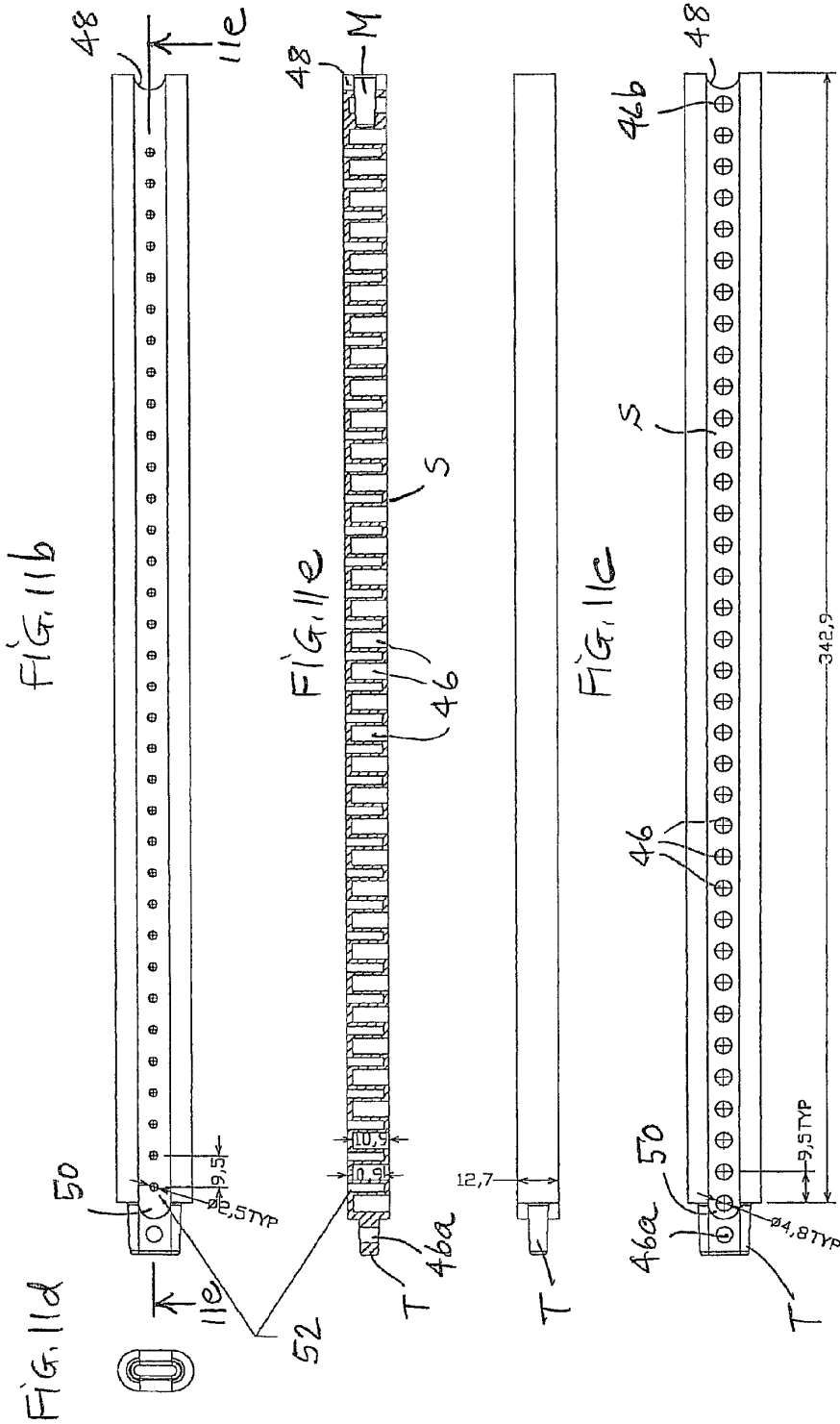


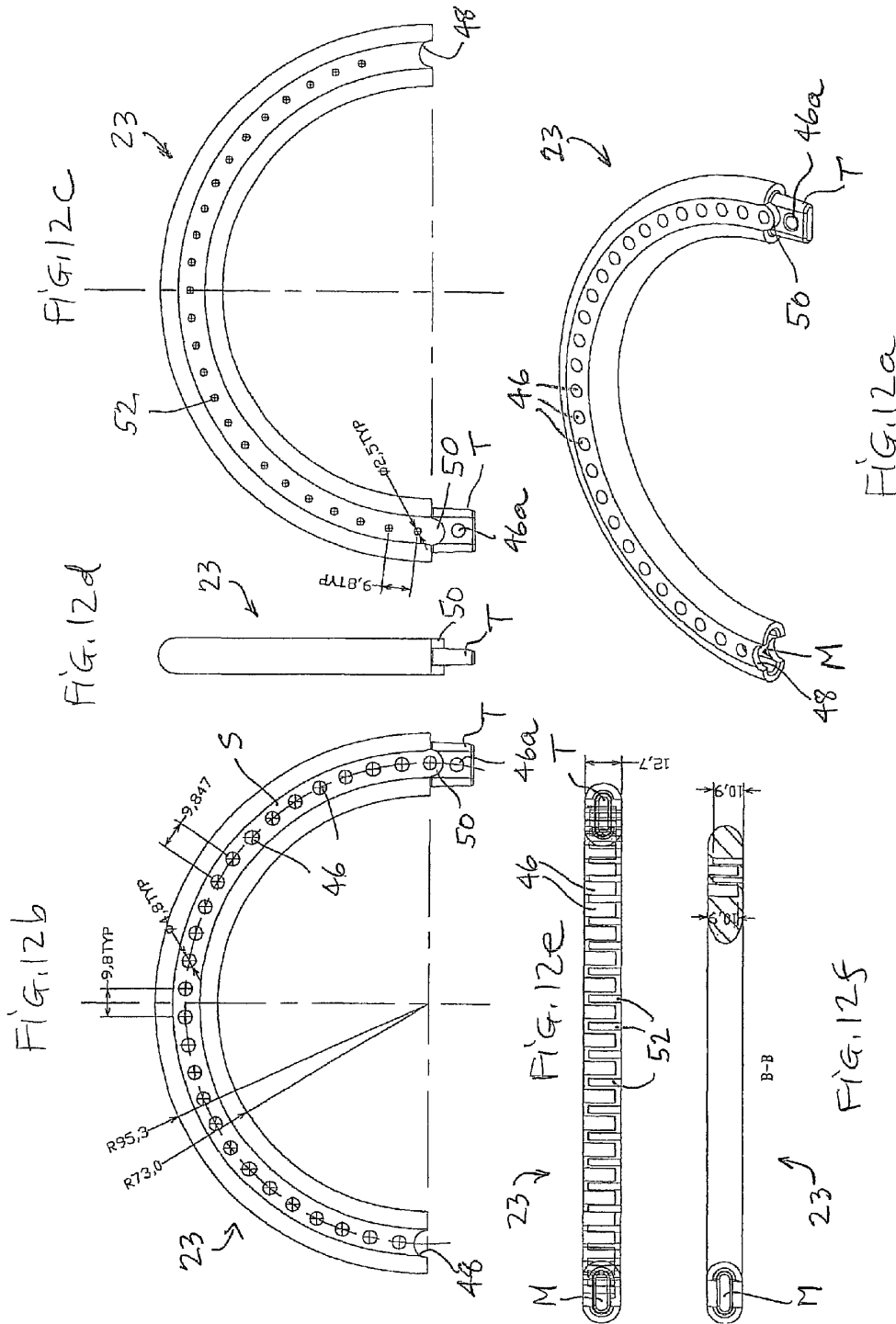
FIG. 7b











MODULAR ADJUSTABLE FRAME HAND LOOM

CROSS REFERENCE TO RELATED APPLICATION

This application is related and claims priority of Provisional Patent Application Ser. No. 61/327,353 filed Apr. 23, 2010.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to frame looms and, more specifically, to a kit for a modular adjustable frame hand loom suitable for knitting and weaving yarns.

2. Description of the Prior Art

Knitting and weaving have long been popular hobbies and a large variety of items can be made on a loom in the form of a frame generally having a shape corresponding to the article to be made. A typical loom includes pegs that project from the frame around which the yarn is looped in various ways, such as running back and forth between opposite sides of the frame. However, there are limitations associated with frame-knitting devices characterized by the prior art. Typically, loops of yarn are attached or looped about the pegs and, depending on the spacing between the pegs it may be difficult to manipulate the loops. Circular frames, for example, are normally used for knit tubular fabrics. However, in order to knit material of different sizes and shapes many frames of different sizes are required.

One example of a generally fixed frame loom is illustrated in U.S. Pat. No. D563,977 for a long knitting loom. A similar knitting loom is disclosed in U.S. Pat. No. 7,506,524. To overcome the deficiencies or disadvantages of a fixed frame loom, one or more cross-bridges are disclosed in the last-mentioned patent that are connected to the base structure and traverse two parallel spaced bars. By including such cross-bridges at selected locations the loom can provide additional pins between the parallel bars to effectively change the longitudinal length of the frame along its length direction. Such cross-bridges are intended to configure the loom to produce different working lengths and a circular knit having a diameter smaller than the effective length of the overall loom.

A fixed frame loom is also disclosed in U.S. Pat. No. 4,729,229 that provides rows of pins on opposite sides of a slot. The pins are integrally molded in a replaceable insert member that may be removed from the frame of the device and replaced by another insert member that has pins that are spaced differently, of different diameters, or perhaps different elastic characteristics. However, the general configuration and size of the frame remains fixed.

In order to overcome some of the disadvantages associated with fixed frame looms, various adjustable frame looms have been proposed. An early example of such an adjustable loom is disclosed in U.S. Pat. No. 2,072,668 in which a pair of bars is provided with traverse holes to receive threaded bolts. Each bolt is equipped with a wing nut, springs being disposed on the bolts between the bars to normally urge the bars apart to the extent permitted by the adjustable wing nuts. By using such a construction, there is a limited ability to separate the bars and increase the distance between the pins on which the yarn is looped around. A similar knitting device is disclosed in U.S. Pat. No. 2,237,733 in which spacing washers are disposed on the bolts between the bars for providing a predetermined distance or spacing of the slot for a desired width of the fabric to be knitted.

An early adjustable hand weaving frame loom is disclosed in U.S. Pat. No. 2,433,307. However, while this loom is constructed so that modular sections can be arranged end-to-end and formed into various polygonal shapes or sizes, the sections are held together by two spaced bores on one section and aligned pins on another mating section. However, there is no locking feature that maintains the connected sections connected to each other, and pulling one section of the frame relative to the other could separate the sections from each other.

An adjustable loom disclosed in U.S. Pat. No. 3,800,372 includes upper and lower rails with elongated slots and left and right hand rails with tongues at their ends that are adjustably receivable in elongated slots of the upper and lower rails. Each of the rails has a row of openings that are equally spaced from each other and headed pins are received in desired openings. The pins that are received in the intermediate rails are longer than those that are mounted on the other rails so that the tops of all the pins lie in the same plane. Separate corner posts must be used, however, to secure the rails together in their adjusted positions. The corner post may be used to adjust the trimmer in which the loom is adjusted for knitting articles of different sizes but cannot serve as pegs for looping yarn. The loom may also be disassembled for storage.

A manual knitting frame is disclosed in U.S. Pat. No. 3,967,467 that consists of two parallel bars held apart to create a relatively narrow slot between them. Each bar carries a row of spaced upright pins on which yarn may be looped during knitting. To vary and standardize the length of the stitches an adjustable member is provided for spacing the bars apart for any one of several fixed but selectable distances. A stitch selector is provided for this purpose that has a series of notches that can be engaged with a fixed detent.

Another knitting frame formed of two parallel bars that are adjustably spaced from each other is disclosed in U.S. Pat. No. 4,248,063. However, to adjust the spacing between the elongated members rods pass through the bars, some of which are threaded and carry rotating knobs used for adjustments. The frame is bulky and costly to produce and not intended to be assembled or disassembled by the user.

A handloom construction that utilizes separate pieces or modules is disclosed in U.S. Pat. No. 4,023,245. The construction contemplates the use of end-to-end frame modules. Connection of modules utilizes an additional pin that serves both as a pin unit spacing of both connected modules. However, in order to lock and retain the geometry of a selected or desired frame configuration special fasteners must be used at the ends of the modules. Failure to adequately tighten them may result in shifting of connected modules relative to one another and, therefore, modification of the desired frame geometry.

A weaving loom is disclosed in U.S. Pat. No. 4,416,040 that includes a plurality of interchangeable sections that together form a loom frame. The sections are separately connected together end-to-end. However, the loom employs a tab and slot construction at the butting ends that not only prevents them from being pulled apart axially but allows the sections to be disconnected when one section is twisted downwardly relative to the other section. Therefore, by placing undesired stresses on the loom or loom sections the sections may inadvertently separate. Additionally, because of the manner in which connected sections are disconnected from each other, requiring twisting of the elements relative to each other, this loom is less convenient and less easy to use since improper twisting may prevent quick or simple disassembly.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a modular adjustable frame hand loom that overcomes the disadvantages inherent in prior art hand looms.

It is another object of the invention to provide a modular adjustable frame hand loom that is simple in construction and economical to manufacture.

It is still another object of the invention to provide a hand loom that is modular and adjustable to selectively provide numerous loom configurations, including square, rectangular, oval and circular suitable for knitting or weaving.

It is yet another object of the invention to provide a hand loom having bars provided with indexed holes and correspondingly configured leg portions on pegs or pins so that the pegs or pins can only be inserted on the bars of the loom with an orientation to outwardly expose elongate axial recesses or guides for guiding needle ends along the external surfaces of the shanks of the pins or pegs.

It is a further object of the invention to provide a hand loom that includes different sized pegs that can be selectively inserted into the bars forming the loom for accommodation of different weight yarns.

It is still a further object of the invention to provide pegs or pins that are color coded to facilitate marking and looping of yarns to create desired patterns.

It is an additional object of the invention to provide a hand loom that is simple and quick to assemble into a desired shape or configuration and disassemble for storage.

It is still an additional object of the invention to provide a hand loom as in the previous object in which end pegs or pins on each linear bar of the loom can be inserted into lined holes on matting tenon and mortise—type elements to lock associated or connected loom linear members or bars to prevent a situation of a loom after it has been assembled.

It is yet an additional object of the invention to provide a hand loom of the type under discussion that allows for modification not only of the size of the selected loom but also the geometrical configuration thereof.

It is also another object of the invention to provide a kit that includes all component parts packaged together for retail sale to consumers in non-assembled form that allows the consumer to achieve the above mentioned objects.

It is also a further object of the invention to provide a method of assembling a modular adjustable frame hand loom of the type suggested in the above objects.

In order to achieve above objects, as well the others that will become here and after, a modular adjustable frame hand loom comprises a plurality of generally elongated sections each of which defines an upper surface and opposing first and second ends. Connecting means are provided for connecting said sections to form a closed frame by connecting a section with two other joining sections in end-to-end abutment by joining a first end of one section with the second end of another joining section. Such connecting means comprises a tenon type axial tab at each first end and a mortise type axial channel at each second end to provide a sliding joint between each two adjoining sections by inserting an axial tab of one section into an axial channel of the adjoining section to provide a stable joint that substantially prevents relative movements between two adjoining sections except along the direction of insertion of said axial tab into said axial channel. Each of said sections is provided with a top surface in said axial tab with a series of substantially uniformly spaced holes or bores, each having an axis substantially normal to said top surface. Holes or bores are arranged on the tabs and coextensive over the channels to align end-most holes or bores at said second

ends with said holes or bores in said axial tabs, at said first ends, when said axial tabs are fully slidably inserted and mated with associated axial channels. A plurality of pegs or pins are provided and dimensioned to be securely received within a hole or bore of one of said sections. Said pegs or pins are dimensioned to be received within said aligned holes or bores at both said second ends and within said tabs at said first ends at each slip joint. In this manner, said pegs or pins inserted into said bores or holes at said second ends and into said holes or bores in said tabs at said first ends function as lock pegs to both secure yarn during knitting as well as to lock said axial tabs from separating from mating axial channels against movements along said direction of insertion. By providing a non-circular cross sectional shape to the legs of the pegs or pins into correspondingly shaped holes in said upper surface, the pins are indexed to always be oriented in a direction to outwardly expose vertical or longitudinal channels or grooves on the pegs to guide the tips or needles or hooks thereby facilitating the gripping of yarns during knitting or weaving. A modular adjustable frame hand loom kit is also disclosed that consists of an assembly of components packaged together for retail sales to consumers in a non-assembled form which comprises a plurality of differently configured and sized bars to allow a user to quickly and simply assemble differently shaped looms, including rectangular, square, oval and circular and also change sizes of some of these looms to accommodate the yarn being used and the nature of the product to be created. The kit also includes differently sized pegs or pins. The pegs or pins may be color coded to facilitate marking of yarns and facilitate the creation of intricate designs. All of the component parts of the kit are housed within an insert in the box that organizes the various component parts, including knitting needles and a weaving tool, so that a user has everything that is needed or required to create different crafted products and for storing parts after they have been disassembled for storage and future use.

A method of assembling of a modular adjustable frame hand loom in accordance with the invention involves connecting different loom bars or elements in end-to-end abutment by inserting the tabs or tenons on first ends of these bars into holes, channels or mortises at the other ends of matting associated bars. Locking pins are inserted into holes that are aligned in both the mortise portions and the tab portions that mate with one another. Such locking pins also serve for looping of yarn but also prevent loom bars or components from separating after they have been assembled. The remaining pegs or pins may be inserted into the other uniformly spaced holes on each of the loom bars or elements before or after the loom is assembled and ready for use.

BRIEF DESCRIPTION OF THE DRAWINGS

Those skilled in the art will appreciate the improvements and advantages that derive from the present invention upon reading the following detailed description, claims, and drawings, in which:

FIG. 1 is an exploded view of a kit of a modular adjustable frame hand loom, showing the various components packaged together in a non-fully assembled form for retail sale to consumers;

FIG. 2 is a top plan view of the kit shown in FIG. 1, with all of the components received within a molded insert or tray as packaged within a box that is closed when sold at retail;

FIG. 3a is a perspective view of a larger peg or pin that forms part of the kit and is used in connection with the adjustable hand loom of the present invention;

5

FIG. 3*b* is a perspective view of a smaller peg or pin forming part of the kit and used in connection with the adjustable loom;

FIG. 4 is a perspective view of a loom using the components of the kit shown in FIGS. 1 and 2 to create an elongated loom frame, shown in partially disassembled form with one component or element of the kit in a position for completing or closing the frame;

FIG. 5 is a fragmented perspective view similar to FIG. 4 but illustrating a generally oval frame construction obtainable with the components of the kit, showing two butting or associated components or bars aligned in a position for final assembly;

FIG. 6 is an exploded perspective view similar to FIGS. 4 and 5 but using components of the kit to form a generally rectangular handloom frame;

FIG. 7*a* and FIG. 7*b* are top plan and side elevational views, respectfully, of an L-shaped bar forming part of the kit;

FIGS. 8*a*-8*g* are perspective, elevational, plan and cross-sectional views of a U-shaped bar forming part of the kit;

FIGS. 9*a*-9*g* are perspective, elevational, plan and cross-sectional views of a short bar forming part of the kit;

FIGS. 10*a*-10*f* are similar to FIGS. 9*a*-9*g* but showing details of a medium-sized bar forming part of the kit;

FIGS. 11*a*-11*e* are similar to FIGS. 10*a*-10*f* but showing details of a long bar forming part of the kit; and

FIGS. 12*a*-12*f* are perspective, plan, elevational and cross-sectional views of an arcuate bar forming part of the kit.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now more specifically to the Figures, in which identical or similar parts are designated by the same reference numerals throughout, and first referring to FIG. 1, a kit for a modular adjustable frame hand loom is generally designated by the reference numeral 10.

The kit 10 includes a plurality of components or items that are packaged together for retail sale to consumers in a non-assembled form.

The kit 10 includes a box, carton or container 12 having a generally shallow rectangular receptacle 12*a* and a cover 12*b*, part of which has been removed for illustrative purposes, that is hinged about edge 12*c* for selectively exposing the receptacle 12*a* as shown or for closing the box and securing the components therein.

A tray or insert 13 is molded to generally conform to the interior space or compartment of the receptacle 12*a* so that it can be received therein with little clearance for the lateral movements. The insert or tray 13 includes recesses 13*a*-13*g* accessible from the upper surface of the tray, as shown, to securely receive a plurality of kit components to prevent same from shifting within the box 12.

As will be more fully discussed, the loom kit includes a plurality of elongate sections, including long bars 14, medium bars 16, short bars 18, L-bars 20, U-bars 22 and arcuate or semicircular bars 23. While different numbers of bars may be provided in differently sized kits, the kit illustrated includes two long bars 14, four medium bars 16, four short bars 18, four L-bars 20, two U-bars and two arcuate or semicircular bars 23.

Also included in the kit are four pouches or bags of pegs. A first bag includes 166 small pegs 28, a second bag includes 86 large pegs 30, a further bag includes 41 small pegs and a still further bag includes 20 large pegs. Preferably, the pegs 28, 30, 32, 34 are provided in different colors. In the illustrated kit, the pegs 28 are blue, the pegs 30 are pink, the pegs 32 are

6

orange and the pegs 34 are grey. By providing small and large pegs, to be more fully described, and color coding these pegs, the pegs can be arranged to facilitate the use of the loom and avoid the need to mark certain pegs for certain knitting operations.

A weaving tool 38 is provided in the kit that includes a hook 38*a* at one end and a yarn pusher or manipulator 38*b* at the other end. Different size needles are advantageously provided including two long needles 40, two medium needles 42 and two short needles 44. Also, included in the kit 10 is an L-shaped hook 36 that included a handle 36*a* and an L-shaped or right angle hook 36*b*.

In FIG. 2, the above described components are illustrated within the box 12 as the kit is configured at the point of purchase, and also as kit components would be arranged when the kit is dissembled and placed back in the box and within the tray 13 for storage. All of the components mentioned are received within mating recesses except for the pegs and the needles which are placed in the box prior to insertion of the tray 13 in the box and, therefore, are situated below the tray. These are partially visible through the transparent tray in FIG. 2.

Referring to FIG. 2, each of the bars 14, 16, 18, 20, 22 and 23 include the plurality of the crescent-shaped holes or apertures 46 that are uniformly spaced from each other along the longitudinal directions of the bars. The specific shapes or cross sectional areas of the holes 46 are not critical as long as these holes are not circular. Any hole configurations may be used as long as it defines unique directions for the pins or pegs when inserted into the holes. Referring to FIG. 2, the arcuate or semi-circular bar 23 is shown to define a normal direction N that is perpendicular to the general longitudinal direction of the bar. The holes 46, as will be clear from the description of FIGS. 3*a*, 3*b*, ensure that the pegs are always arranged with a certain grooved or notched surface of the pegs always facing outwardly in the normal direction N at each hole position on the bars.

Referring to FIG. 3*a*, a perspective view is shown of the large pegs 30, 34. The pegs 30, 34 include a shank 30*a*, 34*a*, a foot 30*b*, 34*b*, at one end of the shank configured to be received and mate with the crescent-shaped holes 46. A head 30*d*, 34*d* is provided at the other end as shown. The foot 30*b*, 34*b* may either be solid and have a cross section corresponding to the cross section of the holes 46 or may, preferably, be split to provide a gap or space 30*c*, 34*c* as shown. The legs 30*b*, 34*b* may be press fit into the holes 36 with or without the split 30*c*, 34*c*. However, when split the legs provide some additional resiliency to facilitate insertion and removal of the pegs from the bars. The legs, in the described embodiment, are 10.8 mm high along the axial or right direction of the pegs, while the entire pegs are 38.5 mm. The height of the peg without the head is 33.5 mm. The diameter of the shank 30*a*, 34*a* is 6.6 mm while the maximum dimension of the foot 30*b*, 34*b* is 4.76 mm. The shanks 30*a*, 34*a* are provided with axial recesses, groves or channels 30*e*, 34*e* on the exterior surface as shown that serve as guides for the points of hooks or needles to facilitate and increase the speed of engaging the looped yarns. Referring to FIG. 3*b*, the smaller pegs 28, 32 have a shank 28*a*, 32*a* that it is of substantially uniform cross section and may or may not be provided at the lower end with a split or gap 28*b*, 32*b* shown. As with the larger pegs, the smaller pegs also have a head 28*c*, 32*c* at the opposite or upper end. The shorter pegs are likewise provided with axial recesses, grooves or channels 28*d*, 32*d* as shown, which can also conform the cross-section of the crescent-shaped holes 46 so that the pegs need not to be stepped. The smaller pegs are somewhat shorter at 36.2 mm, while the height of the

shank **28a**, **32a** is 31.2 mm. The maximum dimension of the shank **28a**, **32a** of the shorter pegs is 4.76 mm—the same as that dimension for the larger pegs since in both cases the lower ends of the pegs must be received within the same crescent shaped holes **46**. Therefore, while the shorter pegs have a shank with a cross section that substantially corresponds to the cross sections of the holes **46** only the lower part of the larger pegs **30**, **34** have such cross section and the peg is stepped to a large diameter, as shown, above the insertion portion up to the head **30d**, **34d**. The two different size pegs are used to provide added versatility or flexibility to people who use the loom for knitting or weaving. While the person using the loom generally decides what pegs to use, and the spacing of the pegs, for any given application, it is typical that the smaller sized pegs **28**, **32** would generally be used for lighter weight yarns, while the larger pegs are more appropriate for heavier weight yarns. Thus, for example, the smaller pegs may be used with the following yarn categories: lace, superfine, fine and light, while the larger pegs can be used with yarn categories: medium, bulky and super bulky. This generally follows the recommended U.S. needle size ranges 000-7, and 7 to -11 larger needles, respectively.

Numerous fixed loom configurations can be formed with the elements or components making up the kit and some of these will now be described. Referring to FIG. 4 a generally elongate frame loom is shown in a condition of near full assembly. Loom **47a** is formed of two long bars **14**, joined or secured to each other at their ends by means of two U-shaped bars **22**. In FIG. 4 one of the U-shaped bars is shown connected to the long bars **14** while the other U-shaped bar **22** is shown positioned just prior to full assembly of the loom or just after disassembly of the first part of the loom for storage.

In FIG. 4, all of the bars, irrespective of their shape or configuration are provided with two free ends one of which is provided with an axial tab or tenon T, while the opposing end is provided with a channel or mortise M dimensioned and configured to slidably receive the tabs T. In assembling a loom the tabs at one end of a bar is mated with a channel M of an associated bar. An important feature of the invention is the provision of holes **46a** on the tabs or tenons T that are equally spaced from the next hole as are all of the uniformly spaced holes from each other and holes **46b** are likewise provided at the channel or mortise ends M that are aligned with the holes **46a** when the tabs T are fully inserted into the channels M. In this way, a pin or peg that passes through the aligned holes **46a**, **46b** has a dual function, namely serving as a peg or pin for looping yarn but also as a locking peg to prevent inadvertent separation of two bars from each other by inadvertent separation of a tab T from an associated channel M.

Referring to FIG. 5, another possible configuration for a loom is shown and designated by the reference numeral **47b**. In FIG. 5, a generally oval shaped loom is shown in which only a portion of the loom is illustrated and the rest is broken away. As with the loom **47a**, loom **47b** may be formed by using two long bars **14**. However, instead of utilizing a U-shaped bar **22** arcuate or semi circular bars **23** are used. This provides rounded ends but also increases the space separation between the long bars. As evident from the pins **30**, **34**, in particular the pin that is aligned to be inserted but not yet inserted into the bars the shanks are stepped to provide a smaller diameter and that is receivable within the aligned holes **46a**, **46b**, while the upper portions of the shank are of larger diameter. Other configurations can be created as suggested in FIG. 6 in which one U-shaped bar **22** is shown in the process of being assembled with two L-shaped bars **20**. As will be more evident in connection with FIGS. **7a**, **7b** the tabs or tenons T are preferably tapered as shown and the channels

or mortises M are similarly tapered to facilitate insertion and assembly of the looms. Locking pegs are inserted into the aligned holes **46a**, **46b** after the bars have been mated and fully inserted into abutting relationship against each other. The remaining non-locking pegs or pins can be inserted either prior or subsequent to assembly of the frame into the desired geometrical configuration.

Some additional details of the described bars will now be discussed in relation to FIGS. **7a-12f**. In FIGS. **7a**, **7b** the L-shaped bar **20** is shown to have two legs **20a**, **20b** normal to each other, and a top surface S. The leg **20a** has an end surface **20f** while the leg **20b** has an end surface **20g**. The tab T projects beyond the end surface **20f**. An optional cutout **48**, as shown, extends into the leg **20b**, while a protuberance or projection **50** projects beyond the end surface **20f**. The protuberance or projection **50** corresponds to the shape of the cutout **48** so that a protuberance or projection **50** can be received within a cutout **48** of a cooperating bar. As will be evident, the end most holes **46a** on the tabs T and the holes **46b** over the mortises M are spaced to correspond to the spacing of the other holes to each other, being 9.52 mm from the respective ends or butting surfaces **20f**, **20g**. This way, once two adjacent bars are mated and locked to each other by means of locking pegs or pins, the holes **46a**, **46b** and the locking pegs mounted therein merely form part of a continuum of uniformly spaced pegs along the assembled loom.

The remaining details of the other shaped bars should be evident from the description of the L-shaped bar shown in FIGS. **7a**, **7b**, as all of these bars share basic common features, namely overall cross-sectional configurations, the spacing of the holes **46** for the pegs, the cutouts **48** and the projections **50**. Thus, in FIGS. **8a-8g** details of the U-shaped bars **22** are shown, each consisting of legs **22a**, **22b** and **22c**. As with the L-shaped bar tabs T and channels M are provided at the free ends **20g**, **20f**, the spacing between the holes **46** on the legs **22a**, **22b** being 41.28 mm to form a loom, when connected with straight bars, having a maximum thickness dimension of 63.5 mm.

FIGS. **9a-9g** are generally similar to FIGS. **8a-8g** but illustrate the details of the short bars **18**. While the U-shaped bars in FIGS. **8a-8g** are only provided with holes **46** on the top surface S, shown in FIGS. **8b**, **8e** and **8f**, the straight bars illustrate another optional feature, namely the removal of molding material between the holes **46**. Thus, optional holes **52** are illustrated in FIGS. **9b**, **9e** and **9g** that open on the opposing or bottom surface B from the top surface S. Provision of the optional holes **52** eliminates material and therefore renders the bars less costly to manufacture and also results in lighter bars, and an assembled loom that weights less. It will be noted that the shorter bars typical have an overall length of 72.9 mm while the other dimensions generally correspond to those of the U-shaped bars **22**.

FIGS. **10a-10f** are generally similar to FIGS. **9a-9f** for the medium bars **16**. These bars are also shown to be provided with the optional holes **52**, although the overall length of these bars is 130 mm. Similarly, FIGS. **11a-11e** are generally similar to the Figures shown for the short and medium bars but indicate that the long bars **14** are 342.9 mm long between the end surfaces **20f**, **20g**.

FIGS. **12a-12f** are generally similar to the Figures illustrating the straight bars **14**, **16**, **18** although the bars **23** are arcuate and have a semi-circular shape. The inner and the outer diameters are **73** and **95.3** mm, respectively. Otherwise, the bars are provided with the optional holes **52**, which holes are generally provided in the longer kit members result in elimination of material and weight reduction. Smaller components, such as the L-shaped and U-shaped bars **20**, **22** need not

generally be provided with the optional holes 52 as these components are generally small and light weight.

It will be evident that the kit 10 in accordance with the present invention makes it possible to easily assemble and disassemble selected components to provide a fixed frame hand loom that conforms to the size and shape desired for a given operation and size of resulting product. Thus, the sections or bars 14, 16, 18, 20, 22 and 23 can be assembled to form, for example, a round loom, weaving loom, rake loom, and floret loom. The pegs or pins are not integrally formed with the bars. This allows the pins to serve multiple functions as indicated, to lock and secure the bars to each other in an assembled loom. However, this also allows the appropriate pegs to be used for different applications. Smaller or larger pegs may be used to match the weights of the yarns and the pegs can also be color coded to facilitate in the knitting or weaving operations. Also, by having pegs that can be easily inserted or removed from the bars, the looms have added flexibility or versatility since certain of the pegs may be removed so that pegs are only inserted into every other hole 46, for example. This may be advantageous in certain operations.

When the user has completed a project, all the pegs, including the locking pegs may be removed and the bars may be easily and conveniently separated and replaced into the appropriate recesses of the insert or tray 13 within the box 12 so that all of the component parts remain organized and may be readily reused at a future date.

The looms in accordance with the invention can be used, once assembled, in the same ways as knitting and weaving has been done on prior art frame looms. Examples of how such looms are used are described in U.S. Pat. Nos. 2,072,668; 3,967,467; 4,158,296 and 4,248,063.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What claimed is:

1. An adjustable knitting and weaving hand loom comprising

a plurality of generally elongate sections each of which defines an upper surface and opposing first and second ends;

connecting means on said sections for connecting said plurality of sections to form a closed frame by connecting each section with two other adjoining sections in end-to-end abutment by joining a first end of one section with a second end of another adjoining section, said connecting means comprising an axial tab at each first end and a mating axial channel at each second end to provide a sliding joint between each two adjoining sections by inserting an axial tab of one section into an axial channel of an adjoining section to provide a stable joint to substantially prevent relative movements between each two adjoining sections except along the direction of insertion of said axial tab into said axial channel, each of said sections being provided on said upper surface and on said axial tab with a series of substantially uniformly intermediate spaced holes or bores each having axes substantially normal to said upper surface, said holes or bores being arranged to align endmost holes or bores at said second ends with said end-most holes or bores in said axial tabs at said first ends when said axial tabs are

fully slidably inserted and mated within associated axial channels to form slip joints; and

a plurality of pegs or pins each having at least one end portion dimensioned to be securely received within intermediate holes or bores of said sections and within aligned end-most holes or bores within said axial channels at said second ends and within said tabs at said first ends at each slip joint, whereby said pegs or pins inserted into said end-most bores or holes at said second ends and into said end-most bores or holes in said tabs function both to loop yarn during knitting and to lock said axial tabs from inadvertently separating from mating axial channels by movements along said direction of insertion.

2. A hand loom as defined in claim 1, wherein said tabs and channels are tapered to facilitate insertion and assembly of the loom.

3. A hand loom as defined in claim 1, wherein each peg end portion is resilient and dimensioned to provide a press fit into said holes.

4. A hand loom as defined in claim 1, wherein said holes have non-circular cross-sectional shapes and said pins or pegs are each provided with a longitudinal groove beyond said end portions, said end portions of said pins or grooves having configurations and dimensions corresponding to said non-circular shapes to be received within said non-circular holes with an angular orientation to position said longitudinal grooves facing in a direction substantially normal to a length direction of an associated elongate section.

5. An adjustable knitting and weaving hand loom kit including an assembly of components packaged together for retail sale to consumers in a non-fully assembled form and comprising

a plurality of generally elongate sections each of which defines an upper surface and opposing first and second ends;

connecting means on said sections for connecting said plurality of sections to form a closed frame by connecting each section with two other adjoining sections in end-to-end abutment by joining a first end of one section with a second end of another adjoining section, said connecting means comprising an axial tab at each first end and a mating axial channel at each second end to provide a sliding joint between each two adjoining sections by inserting an axial tab of one section into an axial channel of an adjoining section to provide a stable joint to substantially prevent relative movements between each two adjoining sections except along the direction of insertion of said axial tab into said axial channel, each of said sections being provided on said upper surface and on said axial tab with a series of substantially uniformly spaced intermediate holes or bores each having axes substantially normal to said upper surface, said holes or bores being arranged to align end-most holes or bores at said second ends with said end-most holes or bores in said axial tabs at said first ends when said axial tabs are fully slidably inserted and mated within associated axial channels to form slip joints; and

a plurality of pegs or pins each dimensioned to be securely received within intermediate holes or bores of said sections and within aligned end-most holes or bores within said axial channels at said second ends and within said tabs at said first ends at each slip joint, whereby said pegs or pins inserted into said end-most bores or holes at said second ends and into said end-most bores or holes in said tabs function both to looping yarn during knitting and to

11

lock said axial tabs from inadvertently separating from mating axial channels by movements along said direction of insertion.

6. A kit as defined in claim 5, wherein said tabs and channels are tapered to facilitate insertion and assembly of the loom.

7. A kit as defined in claim 5, wherein each peg end portion is resilient and dimensioned to provide a press fit into said holes.

8. A kit as defined in claim 5, wherein said holes have non-circular cross-sectional shapes and said pins or pegs are each provided with a longitudinal groove beyond said end portions, said end portions of said pins or grooves having configurations and dimensions corresponding to said non-circular shapes to be received within said non-circular holes with an angular orientation to position said longitudinal grooves facing in a direction substantially normal to a length direction of an associated elongate section.

9. A kit as defined in claim 5, wherein said plurality of sections comprise differently shaped elongate sections.

10. A kit as defined in claim 9, wherein said elongate shaped sections include straight and curved sections.

11. A kit as defined in claim 9, wherein said elongate sections include U-shaped sections.

12. A kit as defined in claim 9, wherein said elongate sections include semi-circular sections.

13. A kit as defined in claim 5, wherein said kit includes straight, semi-circular and U-shaped sections.

14. A kit as defined in claim 5, wherein said kit includes at least one of an L-shaped hook and a weaving tool.

15. A kit as defined in claim 5, further comprising a container provided with recesses substantially corresponding to the shapes and dimensions of said elongate sections for receiving and storing said plurality of elongate sections when not in use.

16. A kit as defined in claim 5, wherein said elongate sections include at least two different length sections.

17. A kit as defined in claim 5, wherein said plurality of pegs or pins include at least two differently sized pegs or pins.

18. A kit as defined in claim 5, further comprising at least one needle.

19. A method of assembling an adjustable knitting and weaving hand loom comprising providing a plurality of generally elongate sections each of which defines an upper surface and opposing first and second ends; connecting each section with two other adjoining sections in end-to-end abutment by joining a first end of one

12

section with a second end of another adjoining section, said connecting means comprising an axial tab at each first end and a mating axial channel at each second end to provide a sliding joint between each two adjoining sections by inserting an axial tab of one section into an axial channel of an adjoining section to provide a stable joint to substantially prevent relative movements between each two adjoining sections except along the direction of insertion of said axial tab into said axial channel, each of said sections being provided on said upper surface and on said axial tab with a series of substantially uniformly spaced intermediate holes or bores each having axes substantially normal to said upper surface, said holes or bores being arranged to align end-most holes or bores at said second ends with said end-most holes or bores in said axial tabs at said first ends when said axial tabs are fully slidably inserted and mated within associated axial channels to form slip joints; and

inserting a plurality of pegs or pins into said holes or bores, each peg or pin being dimensioned to be securely received within intermediate holes or bores of said sections and within said end-most aligned holes or bores within said axial channels at said second ends and within said tabs at said first ends at each slip joint, whereby said pegs or pins inserted into said end-most holes or bores at said second ends and into said end-most bores or holes in said tabs function both to looping yarn during knitting and to lock said axial tabs from inadvertently separating from mating axial channels by movements along said direction of insertion.

20. A component part of a multi-component kit for use with an adjustable knitting and weaving hand loom for weaving yarn comprising an elongate section that defines an upper surface and a first end configured as an axial and a mating axial channel at an opposing second end, an axial tab at said first end, said axial tab having an external configuration and dimensions corresponding to the internal configuration and dimensions of said channel, a plurality of substantially uniformly spaced intermediate holes or bores each having axes substantially normal to said upper surface and including two end most holes or bores one extending through said axial tab and one extending through said channel, respectively, whereby a peg inserted into aligned end most holes in a tab and a channel of two associated component parts that are mated with each other can be used both for looping yarn and for locking the two associated parts against inadvertent separation.

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(54) **HAND KNITTING LOOM AND METHOD OF USE**

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See application file for complete search history.

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(74) *Attorney, Agent, or Firm*—Honigman Miller Schwartz and Cohn LLP

(57) **ABSTRACT**

A loom includes a plurality of knitting pegs. The loom further includes a substantially non-circular base structure configured to hold the plurality of knitting pegs substantially perpendicular to the plane of the substantially non-circular base structure. The substantially non-circular base structure also includes an elongated orifice having a long axis and a short axis. The plurality of knitting pegs form two substantially parallel rows of knitting pegs separated by the short axis of the elongated orifice. The loom also includes at least one knitting peg near the apex of the long axis of the elongated orifice and between the two substantially parallel rows of knitting pegs.

22 Claims, 5 Drawing Sheets

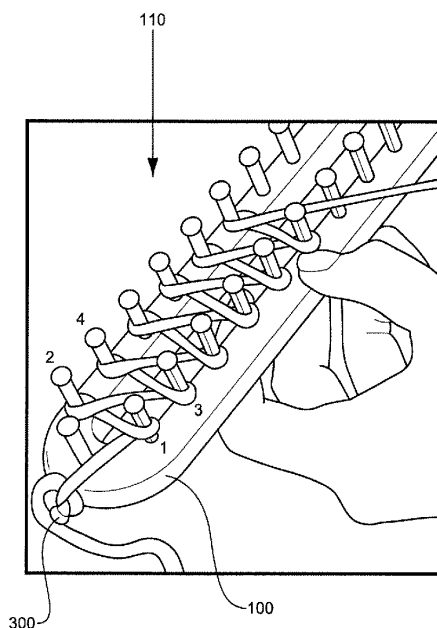


FIG. 2A

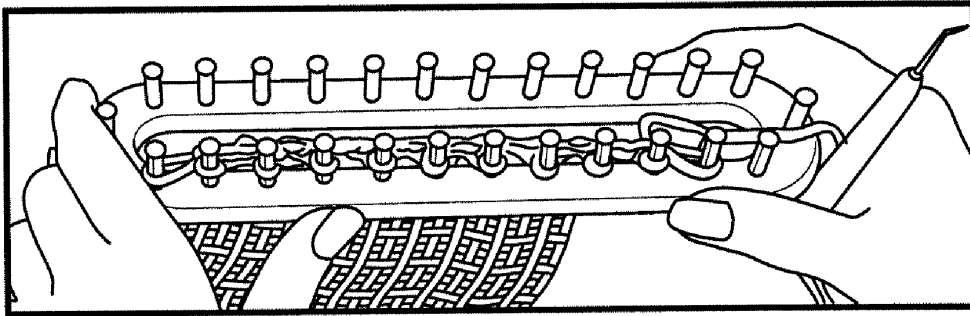


FIG. 2B

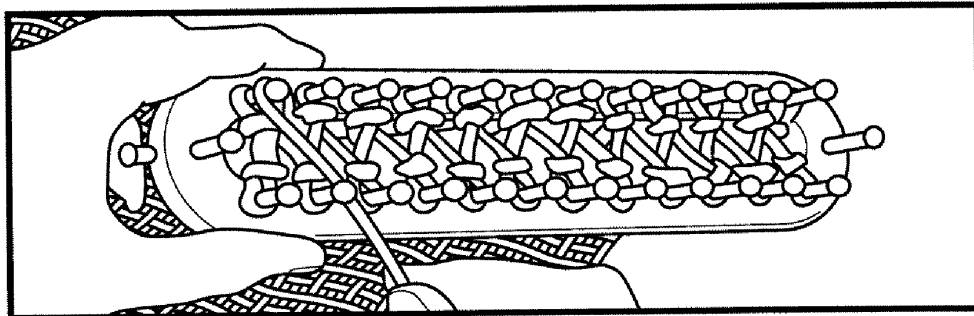


FIG. 2C

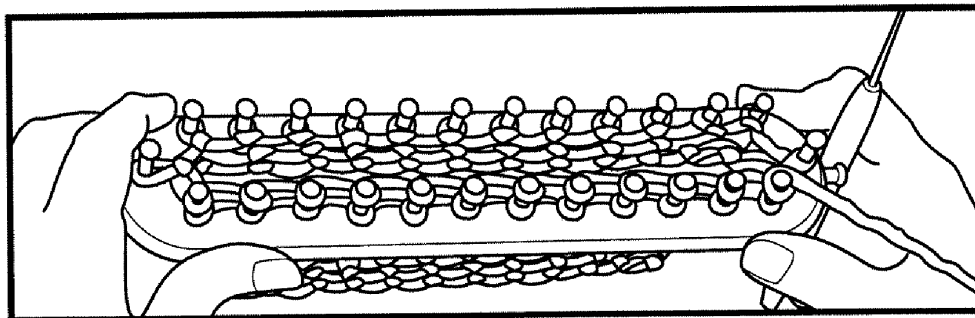


FIG. 3

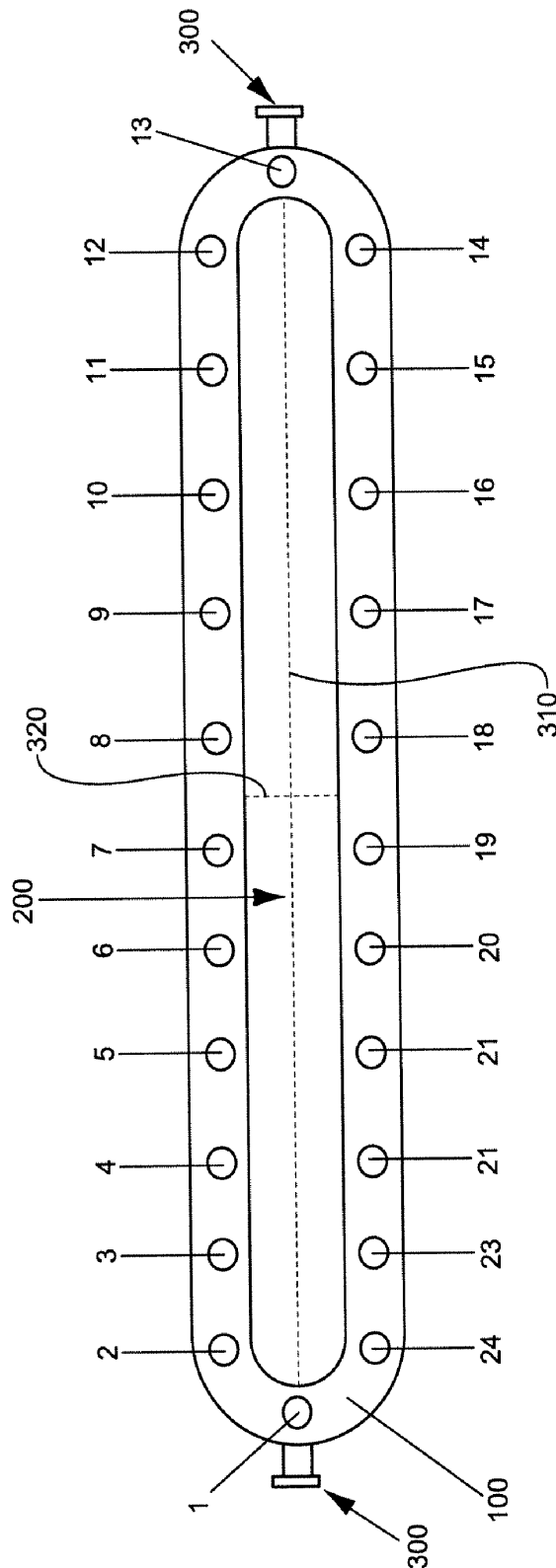
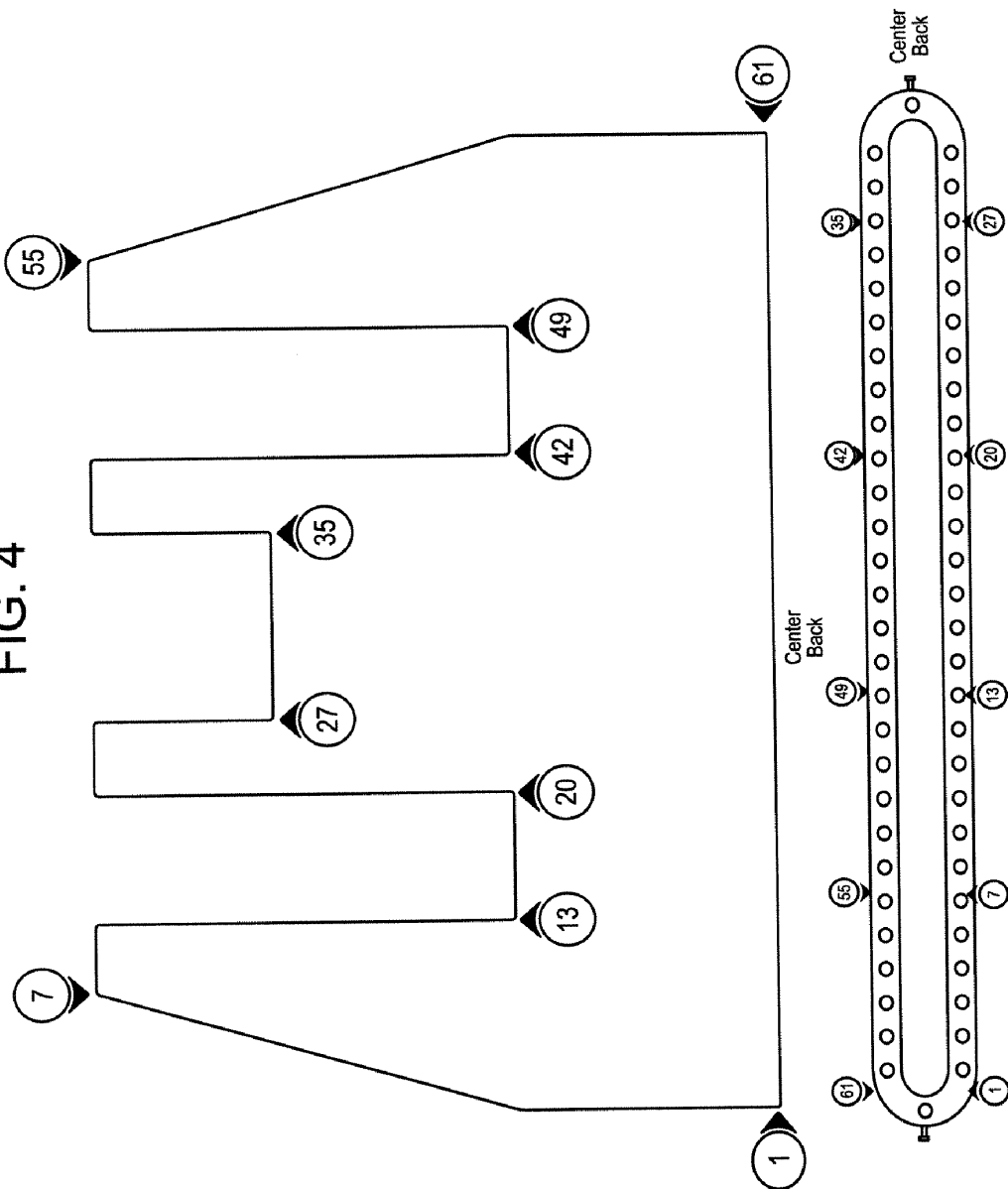


FIG. 4



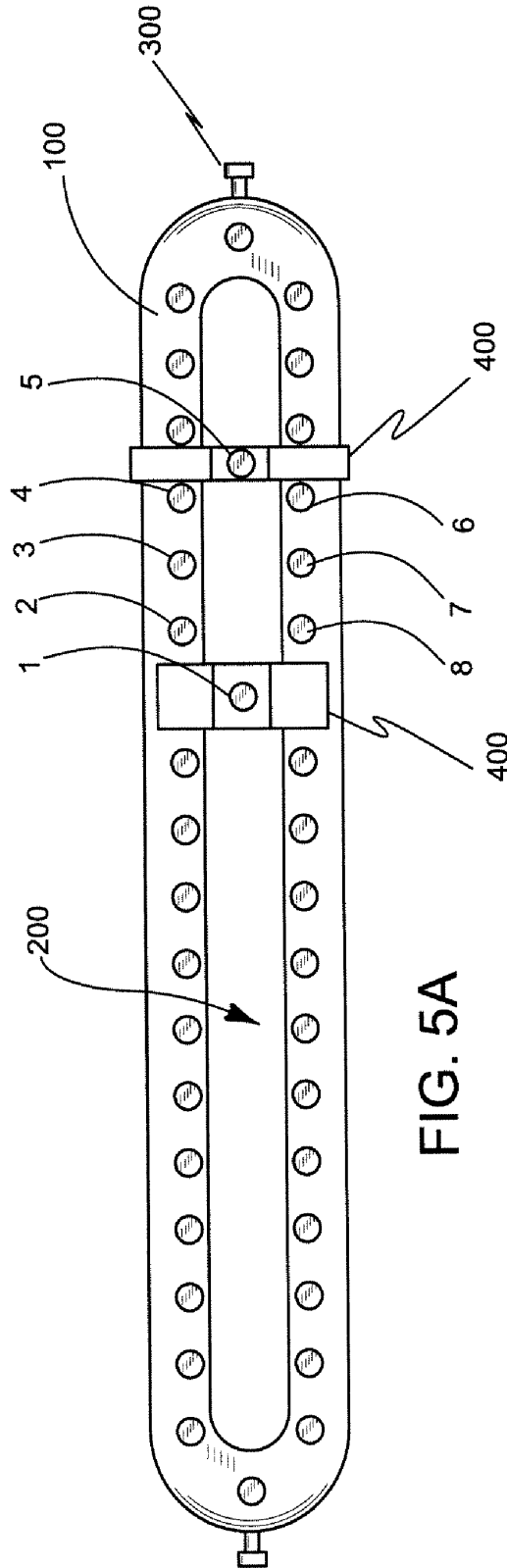


FIG. 5A

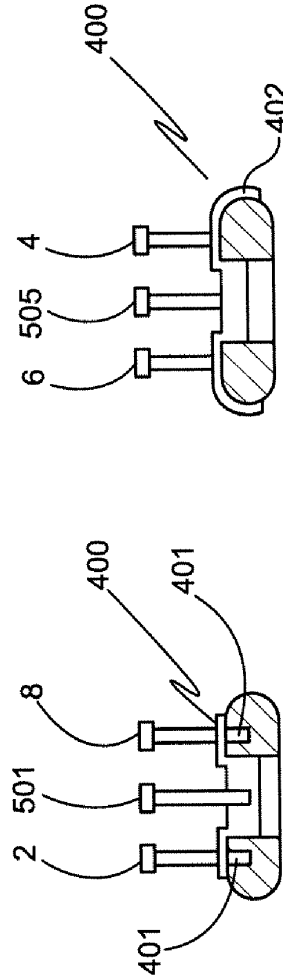


FIG. 5B

FIG. 5C

1
HAND KNITTING LOOM AND METHOD OF USE

CROSS-REFERENCE TO RELATED APPLICATION

The present application claims priority to and hereby incorporates by reference U.S. Provisional Patent Application Ser. No. 60/877,587 filed on Dec. 28, 2006.

TECHNICAL FIELD

This invention relates to a knitting loom and a method of using a knitting loom.

BACKGROUND

Weaving may utilize any number of different kinds of looms, ranging from simple hand held structures to complex machines. Looms commonly used today for non-commercial knitting include handlooms that may be rectangular, circular or oblong and have projecting pegs configured to hold the warp loops and the woven weft loops. An example of a rectangular loom includes the Knifty Knitter™ rectangle loom available from PROVO CRAFT®.

At least one advantage of handlooms is the ease of use and the ability of the user to utilize techniques that are more sophisticated as their skill with the loom increases. However, each type of handloom (e.g., circular, rectangular, oblong) does not provide for multiple uses. For example, a circular handloom is useful for circular knitting. However, the circular handloom does not provide for double knitting of straight pieces and may be difficult to use for single knit.

Therefore, users desiring to knit different styles of knits (e.g., single, double, circular knits) are required to purchase and carry both a circular handloom and a rectangular or elliptical loom. Moreover, the looms take up significant space and may be difficult to use in cramped quarters such as a car or an airplane.

Thus, there is a need for a handloom that is capable of producing single, double, and circular knits. Moreover, it is desirable to provide a loom having a reduced size that may make transporting and using the loom in a restricted space, e.g., a car or airplane, easier.

BRIEF DESCRIPTION OF THE DRAWINGS

The features and inventive aspects will become more apparent upon reading the following detailed description, claims, and drawings, of which the following is a brief description:

FIG. 1 is a perspective view of an example where the loom is a rounded rectangle.

FIG. 2A shows a single knit for use with the loom of FIG. 1.

FIG. 2B shows a double knit for use with the loom of FIG. 1.

FIG. 2C shows a circular knit for use with the loom of FIG. 1.

FIG. 3 is a top plane view of an example of the loom.

FIG. 4 shows an example of peg numbering for knitting a vest.

FIG. 5A is a top plane view of a knitting loom that includes two examples of a moveable bridge.

FIG. 5B is a partial cross-sectional side view of the knitting loom and a first embodiment of the moveable bridge.

2

FIG. 5C is a partial cross-sectional side view of the knitting loom and a second embodiment of the moveable bridge.

DETAILED DESCRIPTION

Referring now to the drawings, illustrative embodiments are shown in detail. Although the drawings represent the embodiments, the drawings are not necessarily to scale and certain features may be exaggerated to better illustrate and explain novel aspects of an embodiment. Further, the embodiments described herein are not intended to be exhaustive or otherwise limit or restrict the claims to the precise form and configuration shown in the drawings and disclosed in the following detailed description.

The examples discussed herein provide that a single handloom may perform single knit, double knit and circular knit. These looms are typically narrow and compact. They may be shaped, but not exclusively, as oblong, elliptical, and/or rectangular. The looms discussed herein may also be associated with a method of knitting that may include producing a closed circular knitting using a non-circular knitting loom.

The examples discussed herein relate to a non-circular knitting loom. The loom includes a plurality of knitting pegs spaced generally equidistant relative to one another around the perimeter of the loom. The loom may provide for at least one knitting peg at one or more ends of the loom. Alternatively, the knitting peg may be located at the apex of the rectangle, ellipse, oval, rounded rectangle and/or oblong between two substantially parallel rows of knitting pegs.

In general, examples of the looms discussed herein may include a non-circular knitting loom having an orifice between two substantially parallel rows of knitting pegs and at least one knitting peg at an end of the loom between the two substantially parallel rows of knitting pegs. In another example, the plurality of knitting pegs may be spaced equidistant relative to one another around the loom. The loom may be configured as, but not limited to, having a rectangular, elliptical, oblong, oval, or rounded rectangle shape. The loom may also have a knitting peg at one or more ends between the two substantially parallel rows of knitting pegs.

As used herein, "yarn" means any conventional flexible material suitable for weaving, such as commercially available twines and yarn. Also, as used herein, "substantially equidistant" means that any two adjacent knitting pegs are spaced apart by a substantially equal distance. "Substantially equidistant" also refers to the position of a knitting peg at one or more ends of the base structure relative to either of the two substantially parallel rows of knitting pegs, wherein the deviation from equal distance is less than twice the spacing of any two adjacent knitting pegs.

The substantially non-circular base structure of the loom may include, but is not limited to, the following shapes: an ellipse, an oblong, a rectangle, a rounded rectangle or an oval. In addition, the substantially non-circular base structure of the invention includes an orifice having a long axis and a short axis.

In an example, the knitting pegs are detachably connected to the loom. For example, the knitting pegs may be generally cylindrical in shape, having a top end and a bottom end, wherein the bottom end is configured to connect to a hole in the base structure. Optionally, the knitting pegs may have a groove or channel starting at or near the top end of the knitting peg and running to the bottom end or near the bottom end of the knitting peg.

In another example, with reference to FIG. 1, a knitting loom 110 is shown having a substantially non-circular base structure 100 having a top, a bottom, an inside and an outside

surface defining an orifice within the base structure **100** and having a plurality of knitting pegs (**1** to **17**) connected to a top surface of the base structure **100**, wherein the plurality of knitting pegs form two substantially parallel rows (pegs **2**, **4**, **6**, **8**, **10**, **12**, **14**, and **16**, illustrating a first row, and pegs **1**, **3**, **5**, **7**, **9**, **11**, **13**, **15**, and **17** illustrating the second parallel row) substantially perpendicular to the plane of the base structure **100**. Preferably, the knitting pegs are spaced substantially equidistant from one another. Preferably, the base structure **100** includes at least one yarn attachment point, e.g., an end peg **300** (e.g., a yarn attachment point), located on at least one end of the base structure **100**, where the yarn attachment point **300** is useful for holding the yarn in place when initiating knitting.

A typical rectangular or elliptical handloom is useful for knitting straight pieces using a single knit (FIG. 2A) or a double knit (FIG. 2B), but lacks the ability to knit tubes (FIG. 2C). In contrast, circular handlooms are useful for circular knitting, but do not allow double knitting of straight pieces and may be difficult to use for single knit. Therefore, a user wishing to knit single, double and circular knits was required to purchase and carry both a circular handloom and a rectangular or elliptical loom. In contrast, the present invention provides a handloom that is capable of producing all three knits (single, double, and circular knit). In addition to providing a single knitting loom capable of use with single, double and circular knit, the present invention provides a significant size reduction relative to circular looms that makes transporting and using the loom in a restricted space, e.g., a car or airplane, easier.

Referring to the example illustrated in FIG. 3, the non-circular base structure **100** is a rounded rectangle, having an orifice **200** with a long axis **310** and a short axis **320**. It is configured with a plurality of knitting pegs **1** to **24** spaced substantially equidistant from one another and substantially perpendicular to the base structure **100**. Knitting pegs **1** and **13** may be positioned at the apex of long axis **310** of orifice **200** between parallel rows of knitting pegs **2-12** and **14-24**. In addition, the base structure **100** includes at least one attachment point **300** located substantially parallel to the plane of the base at each end of the non-circular base structure. End peg **300** is typically used for holding the yarn in place when initiating knitting.

Pegs **1-18** may be made as part of base structure **100** or they may be made separately or any variation thereof. If any of pegs **1-18** are made separately from base structure **100**, they may be received by base structure **100** by holes. The holes are then configured to receive the peg and hold it tightly in place. In any event, any of pegs **1-18** may be held by base structure **100** permanently or removably.

Referring to FIG. 4, a user may weave a vest by initially tying pieces of yarn around knitting pegs **13**, **20**, **27**, **35**, **42**, and **49**, as an example of a method of knitting an item (e.g., a circular item) using a rectangular or elliptical handloom as described herein. In this example, pegs **13** and **20** correspond to the left armhole. Knitting pegs **41** and **49** correspond to the right armhole. Knitting pegs **27** and **36** represent the initiation of the neck hole. Starting on peg **1**, the user wraps the loom with yarn without utilizing peg **62**. The user then knits for approximately seven inches (approximately 27 rows) using knitting pegs **1** to **61**. On the 28th row of weaving, the user should be knitting from the right to the left. Knit to peg **49**, which has the marker yarn attached to it. Wrap the next eight knitting pegs very loosely. Take the loops from knitting pegs **49** and **48**, and pull the loop from peg **48** through the loop from peg **49**. Then take the loop from peg **47** through the loop from peg **48**. Continue in this manner until the user has

decreased the stitches between the markers, including the loops on the marked knitting pegs (knitting pegs **49** and **42**). Knit across the back part of the vest to the marker on peg **20** and decrease the stitches between the markers on peg **20** and peg **13**. Knit to the end of the row. Any remaining yarn may remain attached and be used for the left front of the vest. Next, the user may attach another piece of yarn as a marker on peg **20**, and knit the back section until the user has knit approximately nine and a half inches, or approximately 38 rows. Knit six stitches to the marker on knitting peg **36** and decrease the stitches between knitting pegs **35** and **27** (they have markers on them). Knit the left side until the user has knitted approximately four inches. Take the weaving off the loom. Attach a piece of yarn as a marker on peg **35** and knit approximately four inches, or approximately sixteen rows. Take the knitting off the loom. Using the attached yarn, knit approximately eight inches. Start decreasing on the front side of the vest, one stitch every inch, or every four rows; repeat six times. Take the knitting from the loom and attach yarn as a marker on peg **49** and knit approximately eight inches. Starting on the front side of the vest, decrease one stitch every inch, or every four rows; repeat six times. Sew the shoulder seams together. The user may add some fringe pieces where desirable.

Referring to FIG. 5, one or more knitting pegs may be located between the substantially parallel rows of knitting pegs by means of a cross-bridge **400** configured to connect to base structure **100**. For example, at least one knitting peg at the apex of long axis **310** (see FIG. 3) of the orifice **200** may be positioned within the orifice **200** (see FIGS. 3 and 5A) by any suitable means. Such means may include cross-bridge **400** configured to attach to the base structure **100** by way of replacing at least one detachable knitting peg with cross-bridge **400** having appendages **401** (e.g., pins) adapted to connect to the base structure **100**, as illustrated in FIG. 5B corresponding to cross-bridge **400** on the left of FIG. 5A. Alternatively, the example shown in FIG. 5C illustrates a cross-bridge **400** adapted to clasp, or be clasped by, the base structure as shown by the cross bridge on the right of FIG. 5A. These examples allow the user to carry a single knitting loom and one or more cross-bridges **400**. Cross-bridges **400** may be configured to produce a circular knit having a diameter smaller than the effective diameter of the knitting loom.

Cross-bridges **400** may connect to base structure **100** in a number of ways including clip attachments (such as wings **402**) or appendages **401** (e.g., pins) that interfere with receiving holes in base structure **100**. Moreover, the clip attachments may also be precisely aligned (e.g., located) with base structure **100** using pins protruding from the under side of each clip attachment. Such alignment provides proper substantially equidistant spacing for movable pin **501** between pins **2** and **8** and matches the pin spacing between, e.g., pins **8** and **7**. Similarly, movable pin **505** is spaced equidistant between pins **4** and **6** and matches the pin spacing between, e.g., pins **6** and **7**.

Alternatively, mounting may use the width of cross-bridges **400** to be configured to fit snugly between pins (on the same side) so that the alignment is provided. Alternative examples may include pins that are attached to only one side of base structure **100**. For example, pin **501** may be attached in an L-shape manner to only one side, received by a hole in base structure **100**. However, cross-bridges **400** provide additional stability for pins **501**, **505** by virtue of providing support on both sides of base structure **100**.

As will be recognized by a person of ordinary skill in the art, the base structure may be of any desirable size and may contain any number of knitting pegs spaced equidistant

5

around the base structure. In addition, the looms of the invention may be made of any suitable material, such as wood, plastic, rubber, or metal.

The present invention has been particularly shown and described with reference to the foregoing embodiments, which are merely illustrative of the best modes for carrying out the invention. It should be understood by those skilled in the art that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention without departing from the spirit and scope of the invention as defined in the following claims. The embodiments should be understood to include all novel and non-obvious combinations of elements described herein, and claims may be presented in this or a later application to any novel and non-obvious combination of these elements. Moreover, the foregoing embodiments are illustrative, and no single feature or element is essential to all possible combinations that may be claimed in this or a later application.

With regard to the processes, methods, heuristics, etc. described herein, it should be understood that although the steps of such processes, etc. have been described as occurring according to a certain ordered sequence, such processes could be practiced with the described steps performed in an order other than the order described herein. It further should be understood that certain steps could be performed simultaneously, that other steps could be added, or that certain steps described herein could be omitted. In other words, the descriptions of processes described herein are provided for illustrating certain embodiments and should in no way be construed to limit the claimed invention.

Accordingly, it is to be understood that the above description is intended to be illustrative and not restrictive. Many embodiments and applications other than the examples provided would be apparent to those of skill in the art upon reading the above description. The scope of the invention should be determined, not with reference to the above description, but should instead be determined with reference to the appended claims, along with the full scope of equivalents to which such claims are entitled. It is anticipated and intended that future developments will occur in the arts discussed herein, and that the disclosed systems and methods will be incorporated into such future embodiments. In sum, it should be understood that the invention is capable of modification and variation and is limited only by the following claims.

All terms used in the claims are intended to be given their broadest reasonable constructions and their ordinary meanings as understood by those skilled in the art unless an explicit indication to the contrary is made herein. In particular, use of the singular articles such as "a," "the," "said," etc. should be read to recite one or more of the indicated elements unless a claim recites an explicit limitation to the contrary.

What is claimed is:

1. A loom comprising:

a plurality of knitting pegs; and

a substantially non-circular base structure connected to said plurality of knitting pegs, wherein the plurality of knitting pegs are arranged substantially perpendicular to said substantially non-circular base structure, wherein said substantially non-circular base structure comprises an elongated orifice having a long axis and a short axis, wherein said plurality of knitting pegs are arranged to form two substantially parallel rows of knitting pegs that are substantially perpendicular to said short axis of said elongated orifice;

at least one knitting peg of the plurality of knitting pegs defining one or more intermediate pegs and being

6

aligned along the long axis of said elongated orifice and arranged between said two substantially parallel rows of knitting pegs; and

at least one end peg arranged on the substantially non-circular base structure, wherein the at least one end peg arranged substantially perpendicularly to the plurality of knitting pegs and the at the one or more intermediate pegs.

2. The loom of claim 1, wherein said at least one end peg is arranged near the one or more intermediate pegs.

3. The loom of claim 1, wherein said substantially non-circular base structure is an oval.

4. The loom of claim 1, wherein said substantially non-circular base structure is a rounded rectangle.

5. The loom of claim 1, wherein the at least one end peg defines means for attaching yarn to said non-circular base structure.

6. The loom of claim 1, wherein said plurality of knitting pegs are detachably connected to said substantially non-circular base structure.

7. The loom of claim 1, wherein said plurality of knitting pegs and intermediate pegs are spaced substantially equidistant relative to one another.

8. A loom comprising:

an elongate base having two beams, said two beams connected at their first ends by a first connecting member, said two beams connected at their second ends by a second connecting member, whereby the connection of the two beams by the first and second connecting members form an elongate orifice;

a plurality of pegs extending from said each of said two beams;

at least one peg extending from one or more of the first and second connecting members, said at least one peg being spaced substantially equidistant to the nearest of said plurality of pegs extending from each of said two beams; and

at least one end peg extending front one of said first connecting member and said second connecting members, wherein the at least one end peg is arranged substantially perpendicularly to the plurality of pegs and the at least one peg.

9. The loom of claim 8, wherein said plurality of pegs and at least one peg are spaced substantially equidistant relative to one another.

10. The loom of claim 8, wherein said elongate base is configured as substantially oval.

11. The loom of claim 8, wherein said elongate base is configured as a rounded rectangle.

12. The loom of claim 8, wherein said plurality of pegs are detachable.

13. The loom of claim 8, wherein said plurality of pegs are unitary with said elongate base.

14. The loom of claim 8, wherein said two beams are detachable.

15. The loom of claim 8, wherein the at least one end peg defines means for attaching yarn to said elongate base.

16. A method of knitting a tube shaped knit material, the method comprising:

providing a substantially non-circular loom having two beams that are connected at their first ends by a first connecting member, said two beams connected at their second ends by a second connecting member, whereby the connection of the two beams by the first and second connecting members form an elongate orifice;

providing a plurality of pegs upon the substantially non-circular loom by arranging a plurality of knitting pegs

7

around the elongated orifice, and arranging at least one end peg substantially perpendicularly the plurality of pegs;

utilizing the substantially non-circular loom for attaching a first end of a length of material to the at least one end peg, and wrapping the material about said plurality of knitting pegs for forming a tube shaped body from the length of material.

17. The method of claim 16, further comprising defining the elongate orifice to include a long axis and a short axis, wherein said plurality of knitting pegs define two substantially parallel rows of knitting pegs that are substantially perpendicular to said short axis of said elongated orifice, wherein said plurality of knitting pegs further define one or more intermediate pegs that is/are aligned with the long axis of said elongated orifice and arranged between said two substantially parallel rows of knitting pegs.

18. The method of claim 17, comprising providing a substantially non-circular loom having a rounded rectangle shape.

19. The method of claim 17, wherein said rounded rectangle shape has one knitting peg at each apex of said long axis of the elongated orifice.

20. The loom of claim 1 further comprising a cross-bridge structure including a central portion flanked by a first lateral portion and a second lateral portion; wherein the first lateral portion is removably-connected to a first elongated base member of the substantially non-circular base structure;

8

wherein the second lateral portion is removably-connected to a second elongated base member of the substantially non-circular base structure; and

wherein the central portion includes at least one second intermediate peg that is aligned with the long axis of said elongated orifice and arranged between said two substantially parallel rows of knitting pegs.

21. The loom of claim 1 further comprising a cross-bridge structure including a central portion flanked by a first lateral portion and a second lateral portion; wherein the first lateral portion is removably-connected to a first beam of the two beams; wherein the second lateral portion is removably-connected to a second beam of the two beams; and wherein the central portion includes at least one second peg.

22. The method of claim 17 further comprising providing a cross-bridge structure including a central portion flanked by a first lateral portion and a second lateral portion; wherein the first lateral portion is removably-connected to a first beam of the two beams; wherein the second lateral portion is removably-connected to a second beam of the two beams; wherein the central portion includes at least one second intermediate peg; and wherein the at least one second intermediate peg is aligned with the long axis of said elongated orifice and arranged between said two substantially parallel rows of knitting pegs.

* * * * *

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN**

CHOON'S DESIGN LLC,
a Michigan limited liability company,

Plaintiff/Counter-Defendant

Case No.: 4:13-cv-13569-TGB-MKM

v.

Hon. Terrance G. Berg

LAROSE INDUSTRIES, LLC,
a New Jersey limited liability company, and
TOYS "R" US, INC.,
a New Jersey corporation.

Defendants/Counter-Plaintiffs

CASE SUMMARY AND PROPOSED DOCKET CONTROL SCHEDULE AND ORDER

Pursuant to Federal Rule of Civil Procedure 26(f), the parties jointly submit this case summary and report:

(1) Plaintiff's statement of claims, legal theories, and basis of federal jurisdiction.

Choon's Design, LLC ("Plaintiff" or "Choon's") alleges LaRose Industries, LLC's ("LaRose") and Toys"R"Us, Inc.'s ("Toys "R" Us") (collectively "Defendants") Cra-Z-Loom product infringes at least Claims 1, and 5-14 of Choon's U.S. Patent No. 8,485,565 ("the '565 Patent" or "the patent-in-suit"). The patent-in-suit concerns a method and device for creating a linked item.

Jurisdiction is proper in this Court pursuant to 28 U.S.C. §1338 (patents, copyrights, trademarks and unfair competition related thereto) based on Choon's allegations of patent infringement pursuant to Title 35 of the United States Code. Venue is proper in this judicial district under 28 U.S.C. § 1391(b) and (c).

(2) Defendants' statement of counterclaims and legal theories.

Defendants LaRose and Toys "R" Us – Delaware, Inc.¹ (collectively, "Defendants"), timely filed on September 10, 2013 their Answer, Affirmative Defenses and Counterclaims to Plaintiff's Complaint. The content of Defendants' Answer, Affirmative Defenses and Counterclaims is fully incorporated by reference herein.

Defendants deny that any of the claims of the '565 Patent read on Defendant LaRose's Cra-Z-Loom product. Defendants further deny that they have infringed the '565 Patent in any manner – either directly or indirectly.

Defendants further assert that the concepts/ideas of a loom kit for creating items consisting of a series of links, such as jewelry and similar items, and a method of creating a linked item, are not novel to or unique with Choon's, as several third parties have developed, marketed and sold them for many years. Defendants assert that each and every element of the independent claims of the '565 Patent are disclosed, taught, or suggested in either a single prior art reference or a combination of prior art references that was/were published more than one (1) year prior to the purported effective filing date of the '565 Patent, i.e., the November 5, 2010 filing date of the Choon's Provisional Patent Application. Defendants assert that the dependent claims of the '565 Patent are equally unpatentable over the aforesaid prior art references, either

¹ Defendant Toys "R" Us-Delaware, Inc. contends it was improperly named as Toys "R" Us, Inc. in the Complaint.

alone or in combination with additional prior art references. Defendants further contend that the claims of the '565 Patent also contain numerous ambiguous terms that are subject to multiple interpretations, as well as terms that lack proper antecedent basis. Furthermore, Defendants contend that at least independent Claim 12 of the '565 Patent improperly recites two different statutory classes of invention (apparatus and method of using such apparatus). Defendants assert that the '565 Patent is therefore invalid for failing to meet the requirements of Pre-AIA 35 U.S.C. §§ 101, 102, 103 and/or 112.

(3) Actual damages sought.

Choon's:

Choon's claims damages sufficient to compensate it for Defendants' alleged infringement of the patent-in-suit. Here, this amount would be Choon's lost profits, together with interest and costs. At a minimum, Choon's seeks damages in an amount that it is not less than a reasonable royalty for each infringing act of Defendants, together with interest and costs. Attorneys' fees are also sought. Choon's also seeks treble damages for Defendants' willful infringement. A further identification and computation of these categories of damages will be made once Choon's receives sufficient information from Defendants to make such calculation.

Defendants LaRose and Toys"R"Us:

At the present time, under Defendants' current counterclaims, Defendants are not seeking damages.

(4) Expected witnesses.

Choon's:

Choon's expects to call witnesses concerning the Defendants' manufacture and use of the allegedly infringing products, inventions disclosed in the patent-in-suit, the prosecution of the application that issued as the patent-in-suit, evidence of non-obviousness, sales and marketing, damages, and the rubber band loom and craft industries. Choon's may also call witnesses on the issue of the Defendants' knowledge of the patent-in-suit as well as background information on the industry in which the accused products are being sold.

Defendants LaRose and Toys"R"Us:

At the present time, Defendants are still evaluating the case to determine potential witnesses, and Defendants reserve the right to call witnesses who do not appear on the following list. At this time, however, in addition to the witnesses identified by Plaintiff, Defendants' potential witnesses include:

- Lawrence Rosen (Chairman of LaRose; designed and developed the allegedly infringing product)
- Nellie Mahabir (CEO of Defendant LaRose)
- Parviz Daftari (Vice President of Research and Development and Engineer of Defendant LaRose; designed and developed the allegedly infringing product)
- Jeff Osnato (Manager of Product Development at Defendant TRU)
- Joe Parker (Senior Buyer at Defendant TRU)
- Choon's attorneys involved in the prosecution of the '565 Patent, including, but not limited to, John M. Siragusa.

(5) Whether any expert witnesses are anticipated and in what subject area.

Choon's:

Choon's may call expert witnesses to support its claims for infringement and damages. To the extent that Defendants allege invalidity as a defense, Choon's may also call expert witnesses on this subject. Choon's may also call experts in patent law.

Defendants LaRose and Toys“R”Us:

Defendants anticipate the need for expert witnesses on the issues of claim construction, non-infringement, invalidity and damages. Defendants reserve the right to present expert testimony from experts on additional subject matter if the need arises during discovery.

(6) Amount of time needed for discovery and summary of discovery conducted to date.

The parties, having conferred, propose the following litigation schedule:

STEP	ACTION	RULE	DATE
1	Initial Case Management Conference	FRCP 26(f)	11/8/13
2	Submit Joint Case Summary	11/1/13 Order	11/12/13
3	Scheduling Conference	11/1/13 Order	11/13/13
4	Initial Disclosures		11/27/13
5	Choon's Preliminary Non-binding Infringement Contentions		1/10/14
6	Defendants serve Preliminary Non-binding Invalidity Contentions		2/7/14
7	All parties make Exchange of Proposed Terms and Claim Elements for Construction		2/20/14
8	Deadline to join other parties and amend pleadings		2/28/14
9	All parties meet and confer to discuss list of Proposed Terms and Claim Elements for Construction		3/17/14
10	All parties make Exchange of Preliminary Claim Construction and Extrinsic Evidence		4/18/14
11	All parties meet and confer to discuss Preliminary Claim Construction and Extrinsic Evidence		5/8/14
12	All parties jointly file Joint Claim		5/30/14

STEP	ACTION	RULE	DATE
	Construction and Prehearing Statement		
13	Choon's files opening claim construction brief		6/26/14
14	Defendants file responsive claim construction brief		7/25/14
15	Choon's files reply brief on claim construction		8/1/14
16	Pre-hearing Conference and technical tutorial if requested by the court		To be determined by the Court
17	Claim Construction Hearing		To be determined by the Court
18	Court's Claim Construction Ruling		To be determined by the Court
19	Choon's makes Final Infringement Contentions		(10 days after Claim Construction Ruling)
20	Defendants make Final Invalidity and Unenforceability Contentions		(10 days after Claim Construction Ruling)
21	Deadline for disclosure of expert testimony (and reports) on issues for which a party bears the burden of proof	FRCP 26(a)(2)	(At least 150 days before initial pretrial conference)
22	Deadline for disclosure of rebuttal expert testimony (and reports)	FRCP 26(a)(2)	(At least 120 days before initial pretrial conference)
23	Deadline for completion of all fact discovery		(At least 90 days before initial pretrial conference)
24	Deadline for filing dispositive motions, including motion on invalidity and unenforceability		(At least 75 days before initial pretrial conference)
25	Deadline for filing all <i>Daubert</i> motions		(At least 75 days before initial pretrial conference)
26	Deadline for parties to make pretrial disclosures	FRCP 26(a)(3)	(At least 30 days before initial pretrial conference)
27	Choon's to provide to other parties its information for Joint Final Pretrial Order, Proposed Jury Instruction and Verdict Form		(At least 30 days before initial pretrial conference)
28	Defendants to provide to Choon's their information for Joint Final Pretrial Order, Proposed Jury Instruction and Verdict Form		(At least 30 days before initial pretrial conference)

STEP	ACTION	RULE	DATE
29	Parties to file Proposed Joint Final Pretrial Order, Proposed Jury Instructions, Joint Verdict Forms and Motions in Limine. Prior to initial pretrial conference, parties shall confer with each other regarding the other party's Motion in Limine, deposition designations, and exhibits and shall submit to the Court in writing any objection they may have to the other party's Motion in Limine, deposition designations, and exhibits.		(At least 2 weeks before initial pretrial conference)
30	Initial Pretrial Conference and hearing on Motion in Limine if required and hearing on objections to deposition designations and exhibits		(At least 2 weeks before pretrial conference)
31	Final Pretrial Conference		To be set by the Court

Stipulated Discovery Limitations

There is no need for discovery to be conducted in phases or limited to certain issues nor a need for additional discovery limitations beyond those contained in the Federal Rules of Civil Procedure.

The presumptive limit of twenty-five interrogatories shall apply, but the parties will work together if additional interrogatories are necessary. Fed. R. Civ. P. 33 shall govern. Any subparts to an interrogatory shall be limited to a reasonable number and, to remove doubt and avoid disputes, an interrogatory inquiring "for each asserted claim" shall be counted as a single interrogatory irrespective of the number of asserted claims.

There shall be no limit on Requests For Admission. Fed. R. Civ. P. 36 shall govern.

There shall be no limit on Requests For Production of Documents and Things. Fed. R. Civ. P. 34 shall govern.

The number of depositions of fact witnesses per side, excluding expert witnesses shall be limited by Fed. R. Civ. P. 30 to ten. The parties shall voluntarily produce all Rule 30(b)(6) witnesses and individual fact witnesses who are employees of the parties or their affiliates without the need to resort to subpoenas to compel their appearance. A deposition notice issued to counsel for the party shall suffice. The parties shall negotiate in good faith for purposes of defining the term “topic” with respect to Rule 30(b)(6) depositions. Each party shall be entitled to depose each expert witness identified by the opposing party. The depositions of expert witnesses shall each be limited to a maximum of seven hours per witness. Any party may move to modify these limitations for good cause, or, the parties may agree to modifications. Such agreements shall be enforceable.

Protective Order

The Parties will ask the Court to enter a Protective Order governing the exchange of confidential information.

Stipulated Scope of Electronic Discovery

The Parties will commit to reach a stipulated agreement on the scope of electronic discovery in conjunction with working on the text of a protective order.

Discovery Completed To Date

Plaintiff served discovery requests on Defendants on November 8, 2013. Defendants have not yet served any requests.

(7) Anticipated depositions.

The parties anticipate taking the depositions of each individual designated in the opposing parties' Rule 26(a) initial disclosures as well as all experts subsequently designated. Additional depositions of both individuals and designees may be required based on information learned during discovery.

(8) Relationship to other cases.

Choon's has another lawsuit pending in the Eastern District of Michigan (*Choon's Design, LLC v. Zenacon, LLC and Steven Verona*) relating to the patent-in-suit.

(9) Necessity of amending pleadings.

Plaintiff anticipates seeking leave to amend the pleadings in the next few months. Specifically, Choon's filed a continuation from the application that issued as the patent-in-suit and that continuation has allowed claims which are set to issue very soon (Continuation application serial number 13/951,558). Additionally, Plaintiff may seek leave to amend and replace Defendant Toys"R"Us with another Toys"R"Us entity in view of the fact that the named Toys"R" Us defendant has indicated that Choon's has not joined the most appropriate party. (See fn. 1, above.) Specifically, Toys "R" Us-Delaware, Inc.'s reasoning for naming it as the proper defendant (rather than its parent company Toys "R" Us, Inc.) is that it is the U.S. operating company, the entity having the business relationship with LaRose Industries, and is the employer of the two Toys"R" Us witnesses. Defendants have no objection to Choon's amending its pleadings to reflect Toys"R" Us-Delaware as the proper defendant.

Defendant LaRose has agreed to dismiss its co-pending action in the District of New Jersey for Declaratory Judgment of Non-Infringement of the '565 Patent and tortious interference and amend its Answer and Counterclaims in this case to add those claims. Plaintiff will not oppose this proposed amendment.

(10) Anticipated motions, including whether dispositive motions are anticipated.

The parties anticipate filing briefs concerning claim construction, summary judgment and necessary pre-trial motions. Defendants will be filing today, December 3, 2013, a Motion for a Stay Pending *Inter Partes* Review of the patent-in-suit in the United States Patent and Trademark Office.

(11) Anticipated cost of litigation.

The parties anticipate litigation costs in excess of \$500,000 (Five Hundred Thousand dollars).

(12) Whether case evaluation is desired.

Choon's:

Choon's desires case evaluation.

Defendants LaRose and Toys"R"Us:

Although state court Case Evaluation can be effective, Defendants do not believe that it is appropriate for this patent infringement action. Defendants are amenable to mediation or facilitation before a qualified mediator or facilitator.

Respectfully submitted,

By: /s/Brian S. Tobin
Theodore W. Olds, III (P42004)
John M. Siragusa (P62573)
Brian S. Tobin (P67621)
CARLSON, GASKEY & OLDS, P.C.
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*Counsel for Plaintiff
Choon's Design, LLC*

By: /s/ L. Pahl Zinn
L. Pahl Zinn (P57516)
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500 Woodward Ave., Suite 4000
Detroit, MI 48226-3425
Telephone: (313) 223-3500
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pzinn@dickinsonwright.com

By: /s/Ralph W. Selitto, Jr.
Ralph W. Selitto, Jr.
Joseph Agostino
William Stroever
GREENBERG TRAUIG, LLP
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Florham Park, NJ 07932
Telephone: (973) 443-3550
selittor@gtlaw.com
agostinoj@gtlaw.com
stroeverw@gtlaw.com

*Counsel for Defendants LaRose Industries,
LLC and Toys "R" Us - Delaware, Inc.*

ORDER

At a session of said Court, held in the Federal Building, City of Detroit, County of Wayne, and State of Michigan, on:

PRESENT: THE HONORABLE TERRENCE G. BERG
United States District Court Judge

Upon reading and filing the foregoing proposed Docket Control Schedule, and the Court being fully advised in the premises;

IT IS HEREBY ORDERED that:

The proposed Docket Control Schedule shall govern the litigation schedule of this matter.

United States District Court Judge

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Cheong Choon Ng
Serial No.: 13/626,057
Filed: 09/25/2012
Group Art Unit: 3765
Examiner: Hurley, Shaun R.
Title: BRUNNIAN LINK MAKING DEVICE AND KIT

Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

DISCLOSURE BY APPLICANT OF RELATED LITIGATION UNDER 37 C.F.R. §1.56

Dear Sir:

Applicant provides the following information relating to this application. This application is a continuation of U.S. Patent No.: 8,485,565 (“the ‘565 patent”). The ‘565 patent is currently part of recently filed litigation. The ‘565 patent is also the subject of an IPR filed on December 4, 2013. The specifics of each matter are provided below.

Choon’s Design, LLC vs. Zenacon, et al.
United States District Court, Eastern District of Michigan
Case No.: 2:13-cv-13568-PJD-RSW

CHOON’S DESIGN LLC vs. LAROSE INDUSTRIES, LLC,
United States District Court, Eastern District of Michigan
Case No.: 4:13-cv-13569-TGB-MKM

CHOON’S DESIGN LLC vs. AC. MOORE INCORPORATED,
United States District Court, New Jersey
Case No.: 1:13-cv-00980-RBK-KMW

CHOON’S DESIGN LLC vs. TRISTAR PRODUCTS, INC
United States District Court, Eastern District of Michigan
Case No.: 2:14-cv-10848-VAR-MAR

CHOON'S DESIGN LLC vs. NGS ICOMMERCE ENTERPRISES CORPORATION
United States District Court, Eastern District of Michigan
Case No.: 2:14-cv-10847-SJM-MAR

CHOON'S DESIGN LLC vs. QUALITY INNOVATIONS INC.
United States District Court, Eastern District of Michigan
Case No.: 2:14-cv-11102-RHC-MJH

In Re: Choon's Design LLC
Patent No.: 8,485,565
Case No.: IPR2014-00218

Applicant believes that no additional fees are necessary; however, the Commissioner is authorized to charge to Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., for any additional fees or credit any overpayment.

Respectfully Submitted,

CARLSON, GASKEY & OLDS, P.C.

/John M. Siragusa/

John M. Siragusa
Registration No. 46,174
400 West Maple Road, Suite 350
Birmingham, Michigan 48009
Telephone: (248) 988-8360
Facsimile: (248) 988-8363

Dated: March 20, 2014

Electronic Patent Application Fee Transmittal

Application Number:	13626057			
Filing Date:	25-Sep-2012			
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT			
First Named Inventor/Applicant Name:	Cheong Choon Ng			
Filer:	John M. Siragusa/Amy Spaulding			
Attorney Docket Number:	67467-009 PUS1			
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	18536850
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	20-MAR-2014
Filing Date:	25-SEP-2012
Time Stamp:	15:05:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	1310
Deposit Account	501482
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	009PUS1_IDS_3-20-14.pdf	612359	no	4
			cc441f25a0a0ed311c50f3d925c34961c5c98006		
Warnings:					
Information:					
2	Foreign Reference	GB2147918.pdf	401584	no	6
			11728ae28e591572cfbc566451e13e5ee3500f63		
Warnings:					
Information:					
3	Other Reference-Patent/App/Search documents	petition-1.pdf	962552	no	66
			d751689dc5b9b5b0ceb387bd5dad574e3e6467f		
Warnings:					
Information:					
4	Other Reference-Patent/App/Search documents	Exhibit-1001.pdf	828090	no	15
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Warnings:					
Information:					
5	Other Reference-Patent/App/Search documents	Exhibit-1003.pdf	7777506	no	217
			c6f2df4cf6f6f1e3b803ed1deb865fbbc0fbb7e7		
Warnings:					
Information:					
6	Other Reference-Patent/App/Search documents	Exhibit-1004.pdf	2175946	no	28
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7	Other Reference-Patent/App/Search documents	Exhibit-1005.pdf	5289768	no	141
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8	Other Reference-Patent/App/Search documents	Exhibit-1006.pdf	513192	no	4
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Warnings:					
Information:					

9	Other Reference-Patent/App/Search documents	Exhibit-1008-1.pdf	1141556	no	3
			63506b9b4f62083d3be45a0c5704630e038891d2c		
Warnings:					
Information:					
10	Other Reference-Patent/App/Search documents	Exhibit-1009.pdf	1178874	no	3
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Warnings:					
Information:					
11	Other Reference-Patent/App/Search documents	Exhibit-1010.pdf	1174277	no	16
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Warnings:					
Information:					
12	Other Reference-Patent/App/Search documents	Exhibit-1011.pdf	734328	no	8
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Warnings:					
Information:					
13	Other Reference-Patent/App/Search documents	Exhibit-1012.pdf	160478	no	3
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Warnings:					
Information:					
14	Other Reference-Patent/App/Search documents	Exhibit-1013.pdf	436059	no	5
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Warnings:					
Information:					
15	Other Reference-Patent/App/Search documents	Exhibit-1014.pdf	457326	no	6
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16	Other Reference-Patent/App/Search documents	Exhibit-1015.pdf	401584	no	6
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Warnings:					
Information:					
17	Other Reference-Patent/App/Search documents	Exhibit-1016.pdf	1494449	no	20
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Warnings:					
Information:					

18	Other Reference-Patent/App/Search documents	Exhibit-1017-1.pdf	806723	no	10
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Warnings:					
Information:					
19	Other Reference-Patent/App/Search documents	Exhibit-1002v3.pdf	7014481	no	49
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Warnings:					
Information:					
20	Other Reference-Patent/App/Search documents	Exhibit-1007.pdf	188354	no	12
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Warnings:					
Information:					
21	Miscellaneous Incoming Letter	3-20-14_LitigationDisclosure_67467-009PUS1.pdf	26838	no	2
			f37fcb502d4a1a72fe1b99451fa9214dc833b57		
Warnings:					
Information:					
22	Fee Worksheet (SB06)	fee-info.pdf	30519	no	2
			d445be9a7bd111f6b7289a6e4ed02e7b7cd25d9f		
Warnings:					
Information:					
Total Files Size (in bytes):			33806843		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/626,057	09/25/2012	Cheong Choon Ng	67467-009 PUS1

CONFIRMATION NO. 7803

POA ACCEPTANCE LETTER

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009



Date Mailed: 12/19/2013

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 12/11/2013.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/hsarwari/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

Practitioners associated with Customer Number:

26096

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

The address associated with Customer Number:

26096

OR


<input type="checkbox"/>	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Choon's Design LLC
48813 West Road
Wixom, MI 48393

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	11/3/2013
Name	Cheong Choon Ng	Telephone	(248) 231-6158
Title	President		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P. O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	17625214
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Spaulding
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	11-DEC-2013
Filing Date:	25-SEP-2012
Time Stamp:	12:09:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73.	StatementUnder373c.pdf	117940 <small>37131fcd66221980b39f8e37b71ae8af37067de2</small>	no	3

Warnings:

Information:

2	Power of Attorney	Executed_POA.pdf	2096521 <small>5de76206743d2e561b95229b97c9a97cd7a5ae</small>	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			2214461		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Cheong Choon Ng
Application No./Patent No.: 13/626,057 Filed/Issue Date: 09/25/2012
Titled: BRUNNIAN LINK MAKING DEVICE AND KIT
Choon's Design LLC, a limited liability company
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. The assignee of the entire right, title, and interest.
2. An assignee of less than the entire right, title, and interest (check applicable box):
- The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
 - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 031741, Frame 0452, or for which a copy thereof is attached.

- B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

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Additional documents in the chain of title are listed on a supplemental sheet(s).

As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/John M. Siragusa/

Signature

December 11, 2013

Date

John M. Siragusa

Printed or Typed Name

46174 - Attorney of Record

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO. Includes details for application 13/626,057, inventor Cheong Choon Ng, and attorney Carlson, Gaskey & Olds, P.C.

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptodocket@cgolaw.com
cgolaw@yahoo.com

Examiner-Initiated Interview Summary	Application No. 13/626,057	Applicant(s) NG, CHEONG CHOON	
	Examiner Shaun R. Hurley	Art Unit 3765	

All participants (applicant, applicant's representative, PTO personnel):

(1) Shaun R. Hurley. (3)_____.

(2) John M. Siragusa. (4)_____.

Date of Interview: 14 November 2013.

Type: Telephonic Video Conference
 Personal [copy given to: applicant applicant's representative]

Exhibit shown or demonstration conducted: Yes No.
If Yes, brief description: _____.

Issues Discussed 101 112 102 103 Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1-16.

Identification of prior art discussed: Carlson (2658364).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Upon examining the claims as filed, Examiner contacted Applicant to discuss possible rejections, as well as drawing objections. After reviewing the rejections and objections with Applicant, it was determined that sending the office action out would be preferred as the double patenting rejections required more attention than an immediate decision over the phone could provide.

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Attachment

Office Action Summary	Application No. 13/626,057	Applicant(s) NG, CHEONG CHOON	
	Examiner Shaun R. Hurley	Art Unit 3765	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 25 September 2012.
 A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
- 4) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) Claim(s) 1-16 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 6) Claim(s) 8-10 is/are allowed.
- 7) Claim(s) 1-3,5,6 and 11-16 is/are rejected.
- 8) Claim(s) 4 and 7 is/are objected to.
- 9) Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) The specification is objected to by the Examiner.
- 11) The drawing(s) filed on 11 October 2013 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) All b) Some * c) None of the:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 09/25/12, 09/06/13, 10/09/13.
- 3) Interview Summary (PTO-413)
Paper No(s)/Mail Date. 11/14/13.
- 4) Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 19, 25.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 8, and 11 are objected to because of the following informalities:

The phrase "spaced part" should read --spaced apart--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 5, and 6 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Carlson (2658364).

Carlson teaches a device for creating an item (Figures), comprising a template including at least two pins (14) spaced apart from each other, each pin including a first end (top of pin), a barrel (middle of pin), a base end having a diameter greater than that of the barrel (bottom of pin), and an access groove (15) on the outward facing sides of template, and a bridge portion (12) extending between the base end of each of the pins.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van*

Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

7. Claim 11 is rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 and 9 of U.S. Patent No. 8,485,565. Although the claims at issue are not identical, they are not patentably distinct from each other because both teach a kit for creating an item comprising a template, at least two spaced apart pin, each having a first end, base end, and access groove, and at least one clip.

8. Claims 11-16 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 7-11 of copending Application No. 13/938717. Although the claims at issue are not identical, they are not patentably distinct from each other because both

teach a kit for creating an item comprising a template, at least two spaced apart pin, each having a first end, base end, and access groove, and at least one clip having the same structure, as well as a hook and elastic members.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

9. Claims 11-16 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 7-11 of copending Application No. 13/951558. Although the claims at issue are not identical, they are not patentably distinct from each other because both teach a kit for creating an item comprising a template, at least two spaced apart pin, each having a first end, base end, and access groove, and at least one clip having the same structure, as well as a hook and elastic members.

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Allowable Subject Matter

10. Claims 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 8-10 are allowed.

Reasons for Allowance

12. The following is an Examiner's Statement of Reasons for Allowance:

Claim 8 and its dependent claims are found to be allowable because the prior art of record neither teaches nor reasonably suggests the recitations found therein, including the specific steps

of linking together elastic bands. The prior art of record, namely Carlson (2658364) is used for knitting, and would not reasonably consider using elastic bands.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shaun R. Hurley whose telephone number is (571)272-4986. The examiner can normally be reached on Mon - Fri, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Clinton T. Ostrup can be reached on (571) 272-5559. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shaun R Hurley
Primary Examiner
Art Unit 3765

SRH
14 November 2013

/Shaun R Hurley/
Primary Examiner, Art Unit 3765

Examiner-Initiated Interview Summary	Application No. 13/626,057	Applicant(s) NG, CHEONG CHOON	
	Examiner Shaun R. Hurley	Art Unit 3765	

All participants (applicant, applicant's representative, PTO personnel):

(1) Shaun R. Hurley. (3)_____.

(2) John M. Siragusa. (4)_____.

Date of Interview: 14 November 2013.

Type: Telephonic Video Conference
 Personal [copy given to: applicant applicant's representative]

Exhibit shown or demonstration conducted: Yes No.
If Yes, brief description: _____.

Issues Discussed 101 112 102 103 Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1-16.

Identification of prior art discussed: Carlson (2658364).

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

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Attachment

Notice of References Cited	Application/Control No. 13/626,057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON	
	Examiner Shaun R. Hurley	Art Unit 3765	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-222,937 A	12-1879	Newcomb	66/4
*	B	US-246,648 A	09-1881	Wilcox	66/4
*	C	US-289,578 A	12-1883	Stewart	66/4
*	D	US-1,318,465 A	10-1919	Seifarth	66/4
*	E	US-1,318,604 A	10-1919	Schneider	66/4
*	F	US-1,500,383 A	07-1924	GOURIE WILLIAM J	66/4
*	G	US-2,318,018 A	05-1943	Semonsen	66/4
*	H	US-2,457,064 A	12-1948	ANTHONY PARISL	66/4
*	I	US-2,658,364 A	11-1953	CARLSON GUSTAV A	66/4
*	J	US-2,687,630 A	08-1954	CARLSON GUSTAV A	66/117
*	K	US-3,648,484 A	03-1972	Gordon, Eileen	66/4
*	L	US-4,416,040 A	11-1983	Towsley, John A.	28/152
*	M	US-2008/0156043 A1	07-2008	Gustin, Clella	66/4

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
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	S					
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Notice of References Cited	Application/Control No. 13/626,057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON	
	Examiner Shaun R. Hurley	Art Unit 3765	Page 2 of 2

U.S. PATENT DOCUMENTS

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A US-2008/0223083 A1	09-2008	Gustin, Clella	66/1.A
*	B US-2012/0047960 A1	03-2012	SASUR, David	66/1.A
*	C US-2012/0112457 A1	05-2012	Ng, Cheong Choon	289/1.5
*	D US-2013/0020802 A1	01-2013	Ng, Cheong Choon	289/1.5
*	E US-8,402,794 B2	03-2013	Sasur, David	66/3
*	F US-8,485,565 B2	07-2013	Ng, Cheong Choon	289/17
*	G US-2013/0300114 A1	11-2013	Ng, Cheong Choon	289/1.5
	H US-			
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	J US-			
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	L US-			
	M US-			

FOREIGN PATENT DOCUMENTS

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*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Receipt date: 10/09/2013

13626057 - GAU: 3765

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057
	Filing Date		2012-09-25
	First Named Inventor	Cheong Choon Ng	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		67467-009 PUS1

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
/SRH/	1	2270619		1942-01-20	A.G. Bowyer	
/SRH/	2	2545409		1951-03-13	J.D. McCall	
/SRH/	3	3377674		1968-04-16	R.F. Brassaw et al.	
/SRH/	4	2134066		1938-10-25	E. Van Ness	
/SRH/	5	1776561		1927-12-03	C. LA Croix	
/SRH/	6	4629100		1986-12-16	Owens	
/SRH/	7	3678709		1972-07-25	Nowicki et al.	
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U.S. PATENT APPLICATION PUBLICATIONS						Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	13626057 - GAU: 3765	
	Filing Date		2012-09-25		
	First Named Inventor	Cheong Choon Ng			
	Art Unit				
	Examiner Name				
	Attorney Docket Number		67467-009 PUS1		

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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EXAMINER SIGNATURE

Examiner Signature	/Shaun Hurley/	Date Considered	11/14/2013
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	62	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "2134066" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "3678709" "1366212" "2360416" "2703482" "5231742" "5687775" "6129551" "7909609" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "3377674" "4629100" "6880364" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6923026" "D330668" "2270619" "2545409" "1073226" "4032179" "5163946" "7578146" "1776561" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859" "7506524" "8316894").PN.	US-PGPUB; USPAT	OR	ON	2013/11/14 15:14
L2	74	(US-20100019495-\$ or US-20110152946-\$ or US-20090215013-\$ or US-20120047960-\$ or US-20080223083-\$ or US-20080156043-\$ or US-20130300114-\$ or US-20130020802-\$ or US-20120112457-\$.did. or (US-6171317-\$ or US-6146144-\$ or US-5927764-\$ or US-5577299-\$ or US-5163946-\$ or US-4032179-\$ or US-3688357-\$ or US-2360416-\$ or US-2108424-\$ or US-0843495-\$ or US-0254288-\$ or US-0254258-\$ or US-D330668-\$ or US-3805345-\$ or US-3748706-\$ or US-3728762-\$ or US-3636987-\$ or US-3438098-\$ or US-3069739-\$ or US-2703482-\$ or US-1599040-\$ or US-1375119-\$ or US-1073226-\$ or US-0782657-\$ or US-1366212-\$ or US-5639090-\$.did. or (US-5437459-\$ or US-4179129-\$ or US-4114892-\$ or US-7909609-\$ or US-D570923-\$ or US-6129551-\$ or US-6065968-\$ or US-5328374-\$ or US-3672679-\$ or US-4667965-\$ or US-3476423-\$ or US-1994659-\$ or US-1424458-\$ or US-6923026-\$ or US-5295280-\$ or US-4569108-\$ or US-6122859-\$ or US-5713094-\$ or US-5459905-\$ or US-8316894-\$ or US-8485565-\$ or US-8402794-\$ or US-7506524-\$ or US-4416040-\$ or US-3678709-\$ or US-2457064-\$ or US-7578146-\$.did. or (US-5231742-\$ or US-2318018-\$ or US-1318604-\$ or US-3648484-\$ or US-2658364-\$ or US-1318465-\$ or US-0222937-\$ or US-2687630-\$ or US-2134066-\$ or US-1500383-\$ or US-0289578-\$ or US-0246648-\$.did.	US-PGPUB; USPAT	OR	ON	2013/11/14 15:17

EAST Search History

L3	20	L2 not L1	US-PGPUB; USPAT	OR	ON	2013/11/14 15:17
S1	1	("6880364").PN.	US-PGPUB; USPAT	OR	ON	2013/04/19 11:52
S2	850	289/2,17,18.1.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 13:26
S3	359	("0248669" "0254258" "0254288" "0525770" "0709535" "0782657" "1073226" "1151231" "1203781" "1375119" "1540810" "1585934" "1599040" "1718641" "2011617" "2351726" "2387264" "2595086" "2703482" "2899226" "3027057" "3069739" "3085823" "3149384" "3197097" "3296670" "3438098" "3701461" "3728762" "3771699" "3873140" "3893603" "4008913" "4014570" "4077619" "4124153" "4182527" "4361977" "4413847" "4444184" "4572555" "4602635" "4815772" "4864956" "4872240" "4873991" "4918785" "4923441" "4957498" "4961741" "5050813" "5087263" "5163946" "5217470" "5316189" "5454150" "5454820" "5454821" "5728109" "5769862" "5776150" "5814069").PN. OR ("2010/0019495" "2108424" "2360416" "254258" "254288" "3688357" "4032179" "5163946" "5577299" "5927764" "6146144" "6171317" "843495").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2013/04/19 13:48
S4	47	289/16.5.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:00
S5	31	d21/334.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:03
S6	0	"273,281,288,309".ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:09
S7	1357	273/281,288,309.ccls.	US-PGPUB; USPAT	OR	ON	2013/04/19 14:09
S8	212	S7 and (pin or peg)	US-PGPUB; USPAT	OR	ON	2013/04/19 14:10
S9	29	("0640555" "0658083" "0750545" "0923863" "1716235" "3672679" "3797134" "3891219" "4057254" "4708348" "4729568" "5328374" "5433611").PN. OR ("5437459" "5639090").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2013/04/19 14:21
S10	80	("0501675" "0923863" "1315483" "1588766" "1615982" "1674533" "2187808" "2296799" "2312157" "2400644" "2529413" "2708862"	US-PGPUB; USPAT; USOCR	OR	ON	2013/04/19 14:24

		"2728149" "2757459" "2836912" "2883764" "2932908" "2949681" "3038272" "3374558" "3589034" "3594940" "3690998" "3693976" "3752481" "3752730" "3905133" "3967388" "3987579" "4006540" "4164091" "4179129" "4493654" "4844473" "4964833" "4979749" "5215467" "5310376" "5328374" "5433611" "5639090" "6065968" "6129551" "6213918" "6413099" "D488515").FN. OR ("3672679" "5328374" "6065968" "6129551" "7909609" "D570923").URPN.				
S11	11	ng-cheong\$.in.	US- PGPUB; USPAT	OR	ON	2013/04/19 14:29
S12	37	(US-20100019495-\$).did. or (US-6171317-\$ or US-6146144-\$ or US-5927764-\$ or US- 5577299-\$ or US-5163946-\$ or US-4032179- \$ or US-3688357-\$ or US-2360416-\$ or US- 2108424-\$ or US-0843495-\$ or US-0254288- \$ or US-0254258-\$ or US-D330668-\$ or US- 3805345-\$ or US-3748706-\$ or US-3728762- \$ or US-3636987-\$ or US-3438098-\$ or US- 3069739-\$ or US-2703482-\$ or US-1599040- \$ or US-1375119-\$ or US-1073226-\$ or US- 0782657-\$ or US-1366212-\$ or US-5639090- \$).did. or (US-5437459-\$ or US-4179129-\$ or US-4114892-\$ or US-7909609-\$ or US- D570923-\$ or US-6129551-\$ or US-6065968- \$ or US-5328374-\$ or US-3672679-\$ or US- 4667965-\$).did.	US- PGPUB; USPAT	OR	ON	2013/04/19 14:37
S13	14	S12 and (knot or tying or tie)	US- PGPUB; USPAT	OR	ON	2013/04/19 14:38
S14	2	brunnian	US- PGPUB; USPAT	OR	ON	2013/04/19 14:42
S15	43304	link same band	US- PGPUB; USPAT	OR	ON	2013/04/19 14:43
S16	593	link same band same elastic	US- PGPUB; USPAT	OR	ON	2013/04/19 14:43
S17	333	link same (band near2 elastic)	US- PGPUB; USPAT	OR	ON	2013/04/19 14:44
S18	30524	"289"/\$.ccls. (band near2 elastic)	US- PGPUB; USPAT	OR	ON	2013/04/19 14:50
S19	12	"289"/\$.ccls. and (band near2 elastic)	US- PGPUB; USPAT	OR	ON	2013/04/19 14:50
S20	8	("1424458" "1994659" "3476423" "3606815").PN. OR ("7861634").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/04/19 14:51
S21	14	("1424458" "1994659" "3476423").URPN.	USPAT	OR	ON	2013/04/19 14:52

EAST Search History

S22	138	("0269247" "0583564" "0717004" "0913962" "1196555" "1424458" "1628023" "1994659" "2328474" "2357750" "2656183" "2737679" "2754533" "2832358" "2851714" "2948003" "3146479" "3205519" "3268938" "3336618" "3343196" "3657774" "3674374" "3812849" "3875933" "3886768" "3893310" "3924288" "3959841" "3977796" "4158250" "4168863" "4182527" "4335490" "4343061" "4375197" "4413847" "4462135" "4533163" "4606964" "4651620" "4841607" "6314769").PN. OR ("4569108" "5295280" "6923026").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/04/19 14:54
S23	88	("0409001" "0428937" "0556383" "0913962" "1006584" "1030661" "1357411" "1468164" "1682984" "1686863" "2095149" "2314779" "2581779" "2648879" "2680272" "2845670" "2851714" "3026587" "3131444" "3226882" "3324592" "3343196" "3550218" "3875620" "4286429" "4569108" "4576664" "4686745" "4907369" "5081746" "5295280" "5301696" "5379782" "5459905" "5504963" "5655224" "5758671" "5893376" "5920909" "D413693").PN. OR ("5459905" "5713094" "6122859").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/04/19 14:59
S24	11	ng-cheong\$.in.	US- PGPUB; USPAT	OR	ON	2013/06/06 14:23
S26	55	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "1366212" "2360416" "2703482" "6129551" "7909609" "5231742" "5687775" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6880364" "6923026" "D330668" "1073226" "4032179" "5163946" "7578146" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859" "7506524" "8316894").PN.	US- PGPUB; USPAT	OR	ON	2013/10/09 10:44
S27	112	("0244452" "0923863" "1160132" "1500383" "1506010" "1588766" "1694849" "1705860" "1776561" "20020153050" "20050205150" "20050247745" "20090126822" "20100212770" "20100218840" "2043082" "2072668" "2094505" "2237733" "2270619" "2296799" "2318018" "2433307" "2481955" "2529413" "2563510" "2582008" "2708862"	US- PGPUB; USPAT; USOCR	OR	ON	2013/10/09 10:52

		"2728149" "2797710" "2932908" "2949681" "3332448" "3665971" "3678709" "3738395" "3800372" "3812887" "3870087" "3967388" "3967467" "3971417" "4023245" "4046171" "4074726" "4103715" "4109685" "4131138" "4158296" "4160467" "4178970" "4244400" "4248063" "4301839" "4305431" "4310030" "4393668" "4416040" "4462432" "4489761" "4493654" "4729229" "4741366" "4825910" "4832085" "4979749" "5215467" "5231742" "5413150" "5433611" "5639090" "6065968" "6129551" "6413099" "7147009" "7424898" "7506524" "7677273" "7748413" "8132596" "D563977").PN. OR ("7506524" "7578146" "7909609" "8316894").URPN.				
S28	126	("0244452" "0911846" "1160132" "1318604" "1500383" "1506010" "1694849" "1705860" "1776561" "1848293" "1859425" "20020153050" "20050205150" "20050247745" "20080156043" "20080223083" "20090126822" "20100212770" "20100218840" "20120047960" "2043082" "2072668" "2094505" "2124067" "2237733" "2270619" "2318018" "2433307" "2457064" "2481955" "2563510" "2582008" "2797710" "3072938" "3332448" "3566531" "3665971" "3678709" "3689075" "3738395" "3800372" "3812887" "3870087" "3967467" "3971417" "4023245" "4046171" "4074726" "4103715" "4109685" "4131138" "4158296" "4160467" "4178970" "4193273" "4244400" "4246768" "4248063" "4301839" "4305431" "4310030" "4393668" "4416040" "4462432" "4489761" "4729229" "4741366" "4825910" "4832085" "5125245" "5231742" "5413150" "5542268" "5577400" "6810697" "7147009" "7424898" "7506524" "7578146" "7677273" "7748413" "8132596" "D563977").PN. OR ("3678709" "4416040" "7506524" "8316894" "8402794").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/10/09 10:58
S29	32	S28 not S27	US- PGPUB; USPAT	OR	ON	2013/10/09 10:59
S30	7	("1776561" "2134066" "2270619" "2545409" "3377674" "3678709" "4629100").PN.	US- PGPUB; USPAT	OR	ON	2013/10/09 16:23
S31	62	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "2134066" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "3678709" "1366212" "2360416" "2703482"	US- PGPUB; USPAT	OR	ON	2013/10/09 16:24

		"6129551" "7909609" "5231742" "5687775" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "3377674" "4629100" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6880364" "6923026" "D330668" "2270619" "2545409" "1073226" "4032179" "5163946" "7578146" "1776561" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859" "7506524" "8316894"). FN.				
S32	58	(US-20100019495-\$ or US-20110152946-\$ or US-20090215013-\$ or US-20120047960-\$ or US-20080223083-\$ or US-20080156043-\$). did. or (US-6171317-\$ or US-6146144-\$ or US-5927764-\$ or US-5577299-\$ or US- 5163946-\$ or US-4032179-\$ or US-3688357-\$ or US-2360416-\$ or US-2108424-\$ or US- 0843495-\$ or US-0254288-\$ or US-0254258-\$ or US-D330668-\$ or US-3805345-\$ or US- 3748706-\$ or US-3728762-\$ or US-3636987-\$ or US-3438098-\$ or US-3069739-\$ or US- 2703482-\$ or US-1599040-\$ or US-1375119-\$ or US-1073226-\$ or US-0782657-\$ or US- 1366212-\$ or US-5639090-\$).did. or (US- 5437459-\$ or US-4179129-\$ or US-4114892-\$ or US-7909609-\$ or US-D570923-\$ or US- 6129551-\$ or US-6065968-\$ or US-5328374-\$ or US-3672679-\$ or US-4667965-\$ or US- 3476423-\$ or US-1994659-\$ or US-1424458-\$ or US-6923026-\$ or US-5295280-\$ or US- 4569108-\$ or US-6122859-\$ or US-5713094-\$ or US-5459905-\$ or US-8316894-\$ or US- 8485565-\$ or US-8402794-\$ or US-7506524-\$ or US-4416040-\$ or US-3678709-\$ or US- 2457064-\$). did.	US-PGPUB; USPAT	OR	ON	2013/10/09 16:25
S33	7	S32 not S31	US-PGPUB; USPAT	OR	ON	2013/10/09 16:26
S34	62	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "2134066" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "3678709" "1366212" "2360416" "2703482" "6129551" "7909609" "5231742" "5687775" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "3377674" "4629100" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6880364" "6923026" "D330668" "2270619" "2545409" "1073226" "4032179" "5163946" "7578146" "1776561" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859"	US-PGPUB; USPAT	OR	ON	2013/10/11 12:37

		"7506524" "8316894").PN.				
S35	58	(US-20100019495-\$ or US-20110152946-\$ or US-20090215013-\$ or US-20120047960-\$ or US-20080223083-\$ or US-20080156043-\$).did. or (US-6171317-\$ or US-6146144-\$ or US-5927764-\$ or US-5577299-\$ or US-5163946-\$ or US-4032179-\$ or US-3688357-\$ or US-2360416-\$ or US-2108424-\$ or US-0843495-\$ or US-0254288-\$ or US-0254258-\$ or US-D330668-\$ or US-3805345-\$ or US-3748706-\$ or US-3728762-\$ or US-3636987-\$ or US-3438098-\$ or US-3069739-\$ or US-2703482-\$ or US-1599040-\$ or US-1375119-\$ or US-1073226-\$ or US-0782657-\$ or US-1366212-\$ or US-5639090-\$).did. or (US-5437459-\$ or US-4179129-\$ or US-4114892-\$ or US-7909609-\$ or US-D570923-\$ or US-6129551-\$ or US-6065968-\$ or US-5328374-\$ or US-3672679-\$ or US-4667965-\$ or US-3476423-\$ or US-1994659-\$ or US-1424458-\$ or US-6923026-\$ or US-5295280-\$ or US-4569108-\$ or US-6122859-\$ or US-5713094-\$ or US-5459905-\$ or US-8316894-\$ or US-8485565-\$ or US-8402794-\$ or US-7506524-\$ or US-4416040-\$ or US-3678709-\$ or US-2457064-\$).did.	US-PGPUB; USPAT	OR	ON	2013/10/11 12:37
S36	7	S35 not S34	US-PGPUB; USPAT	OR	ON	2013/10/11 12:38
S37	12	ng-cheong\$.in.	US-PGPUB; USPAT	OR	ON	2013/10/11 12:38
S38	7	("2457064").URPN.	USPAT	OR	ON	2013/11/12 13:30
S39	62	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "2134066" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "3678709" "1366212" "2360416" "2703482" "6129551" "7909609" "5231742" "5687775" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "3377674" "4629100" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6880364" "6923026" "D330668" "2270619" "2545409" "1073226" "4032179" "5163946" "7578146" "1776561" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859" "7506524" "8316894").PN.	US-PGPUB; USPAT	OR	ON	2013/11/12 13:31
S40	42	("1318604" "1500383" "1694849" "1705860" "1776561" "20080156043" "20080223083" "20120047960" "2072668" "2237733" "2270619" "2318018" "2457064" "3678709" "3967467" "4158296" "4193273" "4246768" "4248063" "4393668" "4729229"	US-PGPUB; USPAT; USOCR	OR	ON	2013/11/12 13:33

		"5125245" "5231742" "5413150" "5542268" "5577400" "6810697" "7506524" "7578146").PN. OR ("7506524" "8402794").URPN.				
S41	3	("1318604").URPN.	USPAT	OR	ON	2013/11/12 13:36
S42	8	("0222937" "1318465" "1318604" "2658364").PN. OR ("3648484").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/11/12 13:36
S43	9	("0222937" "1318465" "1318604" "2658364").PN. OR ("1318465" "222937" "2658364" "3648484").URPN.	US- PGPUB; USPAT; USOCR	OR	ON	2013/11/12 13:37
S44	59	66/4.ccls.	US- PGPUB; USPAT	OR	ON	2013/11/12 13:37
S45	62	("0254288" "1424458" "2108424" "3805345" "5927764" "D570923" "2134066" "20090215013" "3476423" "3688357" "3728762" "5459905" "5577299" "6065968" "3678709" "1366212" "2360416" "2703482" "5231742" "5687775" "6129551" "7909609" "0254258" "0843495" "3069739" "3672679" "4667965" "5437459" "6146144" "3377674" "4629100" "1375119" "1599040" "4179129" "5328374" "5639090" "5713094" "6171317" "6880364" "6923026" "D330668" "2270619" "2545409" "1073226" "4032179" "5163946" "7578146" "1776561" "0782657" "20110152946" "3636987" "3665971" "1994659" "20100019495" "3438098" "3748706" "4114892" "4569108" "5295280" "6122859" "7506524" "8316894").PN.	US- PGPUB; USPAT	OR	ON	2013/11/14 12:30
S46	13	ng-cheong\$.in.	US- PGPUB; USPAT	OR	ON	2013/11/14 12:31
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EAST Search History

		5295280-\$ or US-4569108-\$ or US-6122859-\$ or US-5713094-\$ or US-5459905-\$ or US-8316894-\$ or US-8485565-\$ or US-8402794-\$ or US-7506524-\$ or US-4416040-\$ or US-3678709-\$ or US-2457064-\$ or US-7578146-\$).did. or (US-5231742-\$ or US-2318018-\$ or US-1318604-\$ or US-3648484-\$ or US-2658364-\$ or US-1318465-\$ or US-0222937-\$ or US-2687630-\$ or US-2134066-\$ or US-1500383-\$ or US-0289578-\$ or US-0246648-\$).did.				
S48	20	S47 not S45	US-PGPUB; USPAT	OR	ON	2013/11/14 12:32

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11/ 14/ 2013 3:18:41 PM

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Receipt date: 09/25/2012

13626057 - GAU: 3765

Doc code: IDS

PTO/SB/08a (01-10)

Doc description: Information Disclosure Statement (IDS) Filed

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	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		67467-001 PUS2	

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/SRH/	1	6880364		2005-04-19	Vidolin et al.	

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/SRH/	3	10-2001-0012609	KR		2001-02-15	Citizen Holdings Co., Ltd.		<input type="checkbox"/>

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	Filing Date		2012-09-25		
	First Named Inventor	Cheong Choon Ng			
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/SRH/	1	International Search Report & Written Opinion for PCT Application No. PCT/US2011/041553 mailed on February 23, 2012.	<input type="checkbox"/>


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Search Notes 	Application/Control No. 13626057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON
	Examiner SHAUN R HURLEY	Art Unit 3765

CPC- SEARCHED		
Symbol	Date	Examiner


CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
289	2, 16.5, 17, 18.1	11/14/13	SRH
D21	334		
273	281, 288, 309		
66	4		

SEARCH NOTES		
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INTERFERENCE SEARCH			
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<i>Index of Claims</i> 	Application/Control No. 13626057	Applicant(s)/Patent Under Reexamination NG, CHEONG CHOON
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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
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<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47			
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Final	Original	11/14/2013							
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	3	✓							
	4	O							
	5	✓							
	6	✓							
	7	O							
	8	=							
	9	=							
	10	=							
	11	✓							
	12	✓							
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	15	✓							
	16	✓							

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Doc description: Information Disclosure Statement (IDS) Filed

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	First Named Inventor	Cheong Choon Ng	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		67467-009 PUS1

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/SRH/	1	0254258		1882-02-28	Barbour	
/SRH/	2	0254288		1992-02-28	Dimmick	
/SRH/	3	0782657		1905-02-14	Hubert	
/SRH/	4	0843495		1907-02-05	Sander	
/SRH/	5	1073226		1913-09-16	Freeman	
/SRH/	6	1366212		1921-01-18	Pollard	
/SRH/	7	1375119		1921-04-19	Stephen	
/SRH/	8	1424458		1922-08-01	Fleisher	

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			Filing Date	2012-09-25		
			First Named Inventor	Cheong Choon Ng		
			Art Unit			
			Examiner Name			
			Attorney Docket Number	67467-009 PUS1		

/SRH/	9	1599040		1926-09-07	Clisby	
/SRH/	10	1994659		1935-03-19	Mascarenhas	
/SRH/	11	2108424		1938-02-15	Bakely	
/SRH/	12	2360416		1944-10-17	Gray	
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/SRH/	14	3069739		1962-12-25	Jorgenson et al.	
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/SRH/	16	3476423		1969-11-04	Kentfield	
/SRH/	17	3636987		1972-01-25	Forby	
/SRH/	18	3672679		1972-06-27	Burns	
/SRH/	19	3688357		1972-09-05	Nielsen et al.	

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			Filing Date	2012-09-25		
			First Named Inventor	Cheong Choon Ng		
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			Examiner Name			
			Attorney Docket Number	67467-009 PUS1		

/SRH/	20	3728762		1973-04-24	Hogg	
/SRH/	21	3748706		1973-07-31	Doyel	
/SRH/	22	3805345		1974-04-23	Antos	
/SRH/	23	4032179		1977-06-28	Goss	
/SRH/	24	4114892		1978-09-19	Csoka	
/SRH/	25	4179129		1979-12-18	Loomis	
/SRH/	26	4569108		1986-02-11	Schwab	
/SRH/	27	4667965		1987-05-26	Helms, Jr.	
/SRH/	28	5163946		1992-11-17	Li	
/SRH/	29	5295280		1994-03-22	Hudson et al.	
/SRH/	30	5328374		1994-07-12	Stevens	

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			Filing Date	2012-09-25		
			First Named Inventor	Cheong Choon Ng		
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			Attorney Docket Number	67467-009 PUS1		

/SRH/	31	5437459		1995-08-01	Kirby	
/SRH/	32	5459905		1995-10-24	Voyre	
/SRH/	33	5577299		1996-11-26	Thompson et al.	
/SRH/	34	5639090		1997-06-17	Stevens	
/SRH/	35	5713094		1998-02-03	Markey et al.	
/SRH/	36	5927764		1999-07-27	Harriman	
/SRH/	37	6065968		2000-05-23	Corliss	
/SRH/	38	6122859		2000-09-26	Lazar	
/SRH/	39	6129551		2000-10-10	Martin	
/SRH/	40	6146144		2000-11-14	Fowler et al.	
/SRH/	41	6171317		2001-01-09	Jackson et al.	

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			Filing Date	2012-09-25		
			First Named Inventor	Cheong Choon Ng		
			Art Unit			
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			Attorney Docket Number	67467-009 PUS1		

/SRH/	42	D570923		2008-06-10	Vazquez Gastellu	
/SRH/	43	6923026		2005-08-02	Clarke	
/SRH/	44	7506524		2009-03-24	Gustin	
/SRH/	45	7578146		2009-08-25	Gustin	
/SRH/	46	7909609		2011-03-22	Molin	
/SRH/	47	D330668		1992-11-03	Nagamatsu	
/SRH/	48	3665971		1972-11-27	Ilekes	
/SRH/	49	5231742		1993-08-03	Macbain	
/SRH/	50	5687775		1997-11-18	Thompson et al.	
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	First Named Inventor	Cheong Choon Ng			
	Art Unit				
	Examiner Name				
	Attorney Docket Number		67467-009 PUS1		

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/SRH/	1	20090215013		2009-08-27	Molin	
/SRH/	2	20100019495		2010-01-28	Oliveto	
/SRH/	3	20110152946		2011-06-23	Frigg et al.	
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	3	10-2001-0012600	KR		2001-02-15	Citizen Holdings Co., Ltd.		<input type="checkbox"/>
	4	10-2006-0042108	KR		2006-05-12	Montres Pado S.A.		<input type="checkbox"/>

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	First Named Inventor	Cheong Choon Ng			
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Cheong Choon Ng

Serial Number: 13/626,057

Filed: 09/25/2012

Group Art Unit: 3776

Confirmation No. 7803

Title: BRUNNIAN LINK MAKING DEVICE AND KIT

Attorney Docket Number: 67467-009 PUS1

LETTER TO THE OFFICIAL DRAFTSMAN

Dear Sir:

Applicant submits herewith 6 sheets of replacement drawings.

Respectfully submitted,

CARLSON, GASKEY & OLDS, P.C.

John M. Siragusa/

John M. Siragusa

Registration No. 46,174

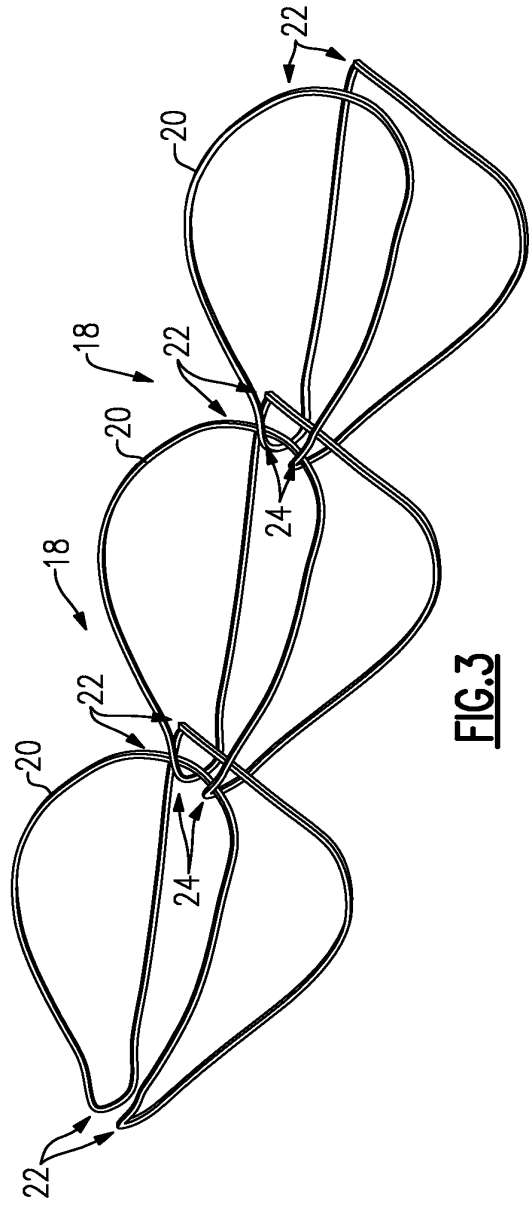
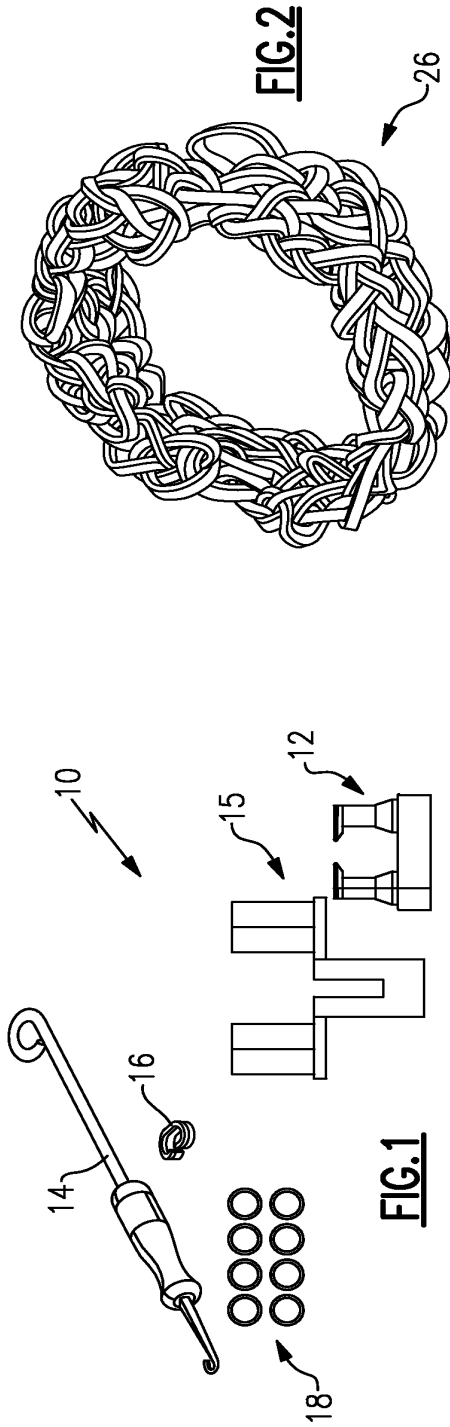
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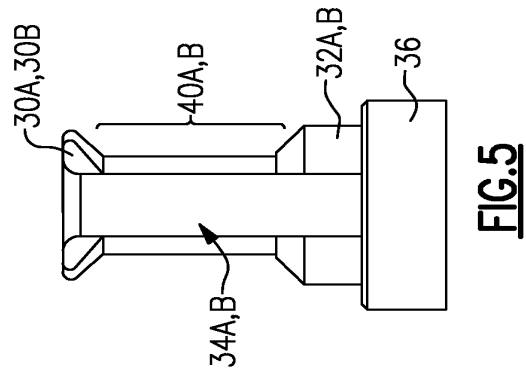
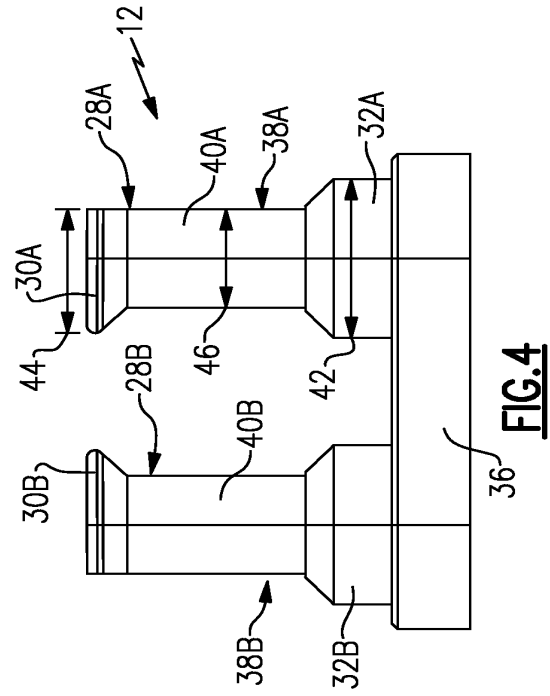
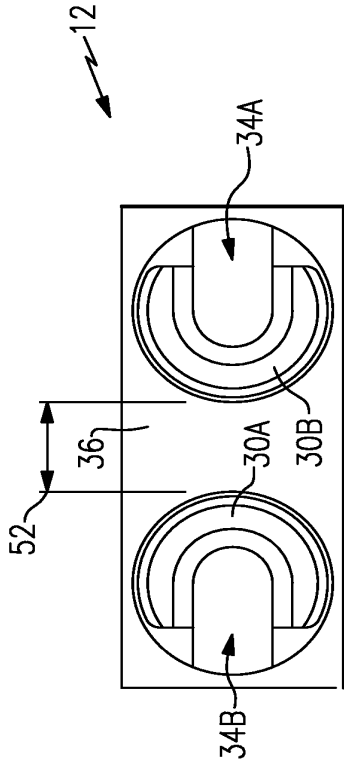
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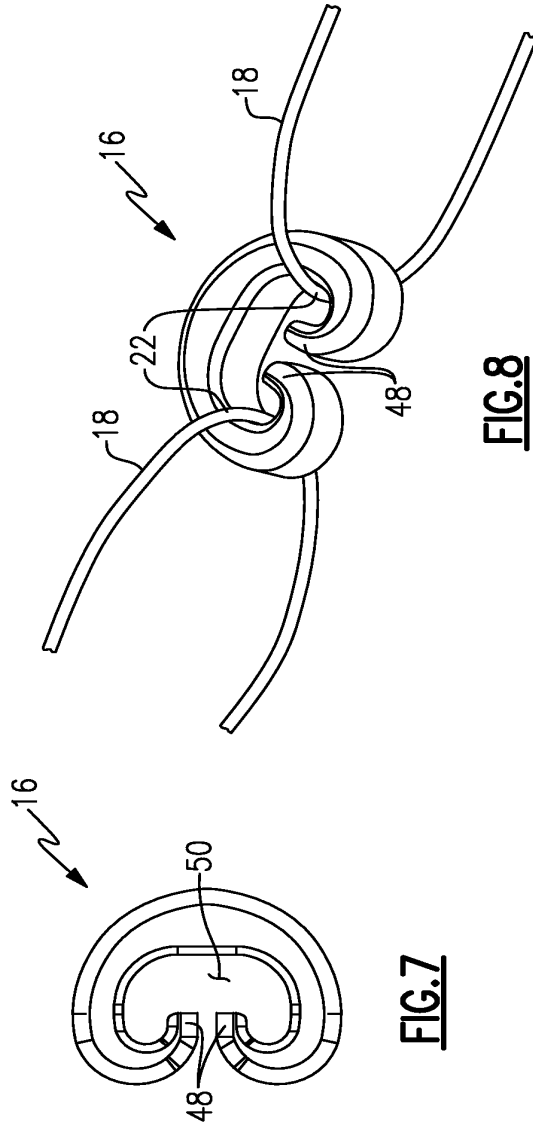
Dated: October 11, 2013





REPLACEMENT SHEET

3/6



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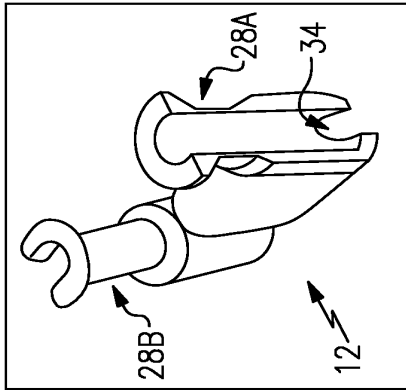


FIG. 9A

2) HOOK RB ON ONE END

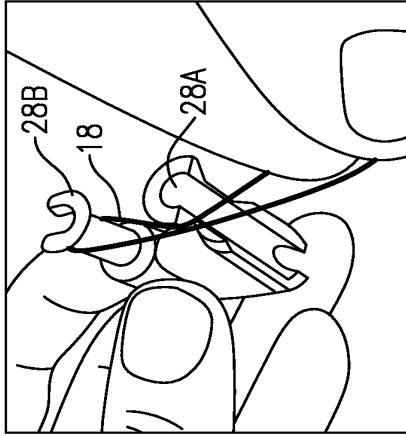


FIG. 9B

2) LOOP RB OVER

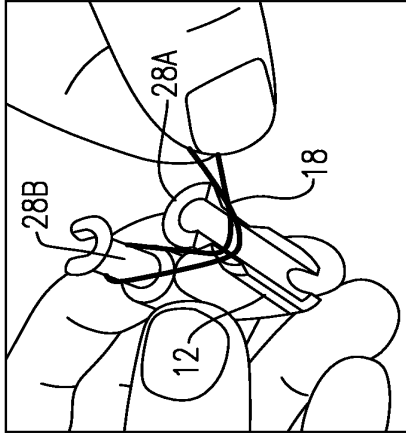


FIG. 9C

4) HOOK RB BACK ON THE PIN

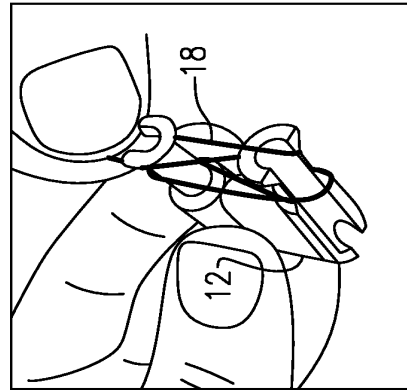


FIG. 9D

5) LOCK ONE END W/ C-CLIP

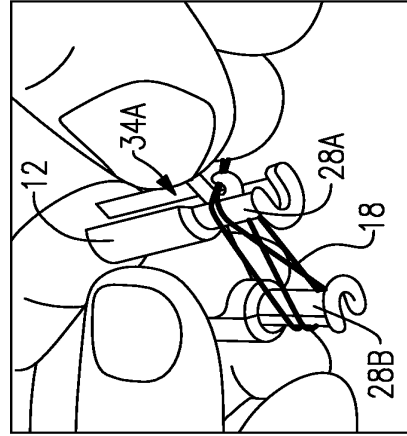


FIG. 9E

6) SLIDE THE HOOK THROUGH THE HOLLOW SLOT

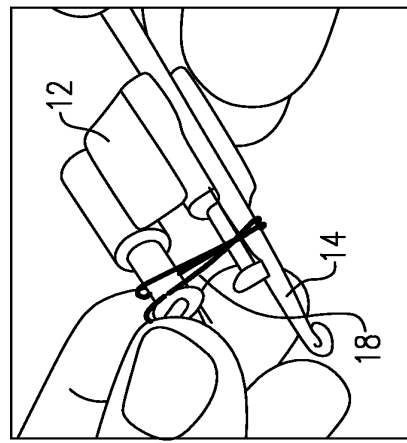


FIG. 9F

7) PICK A SECOND RB

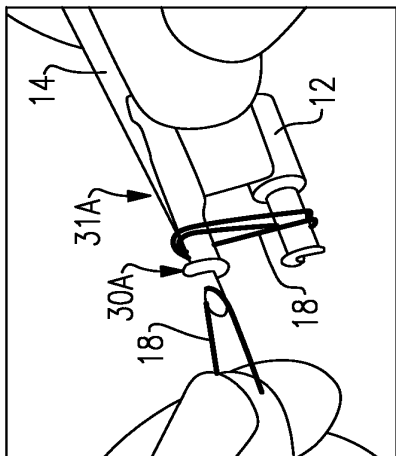


FIG. 9G

8) PULL THE HOOK BACK TO MAKE A LOOP THROUGH 1st RB

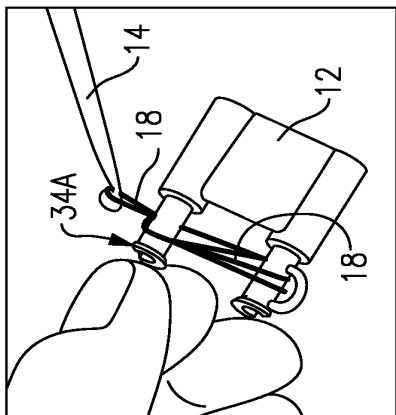


FIG. 9H

9) PICK A THIRD RB

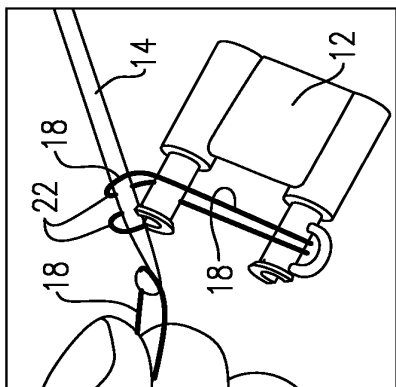


FIG. 9I

9) PULL THE HOOK TO MAKE CONTINUOUS RB LINK

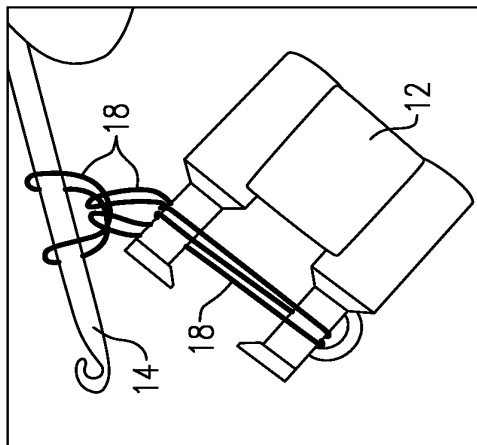


FIG. 9J

10) REMOVE THE LINK FROM TEMPLATE

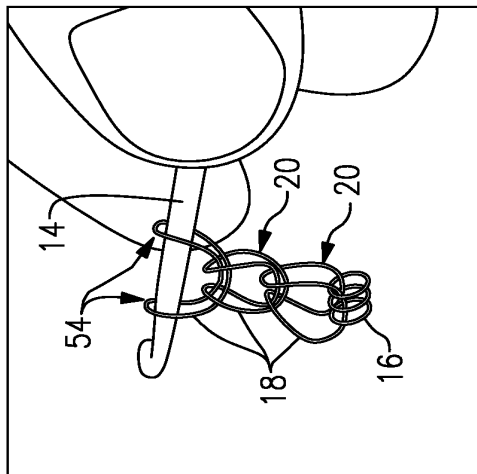
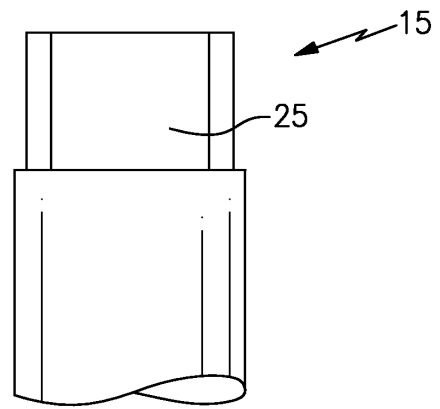
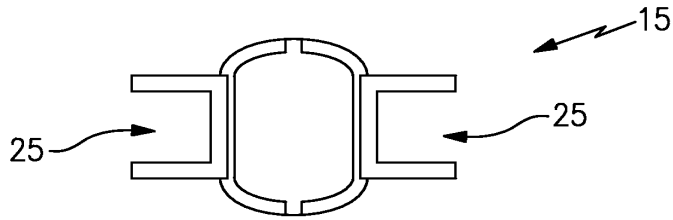
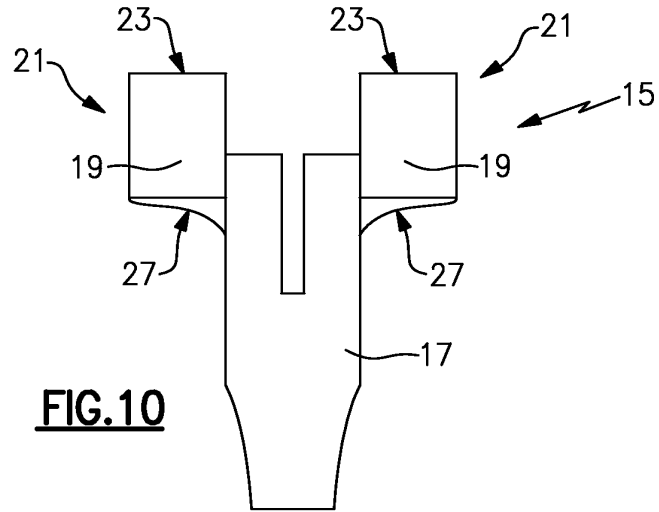


FIG. 9K

REPLACEMENT SHEET

6/6



Electronic Acknowledgement Receipt

EFS ID:	17105232
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Donna Durant
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	11-OCT-2013
Filing Date:	25-SEP-2012
Time Stamp:	13:43:31
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	009PUS1_Cover_Letter_Submit _Replacement_Drawings_10_1 0_2013.pdf	14794 2c94f9c2aff325c7b83bea75de16a966083c 91d2	no	1

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Information:

2	Drawings-only black and white line drawings	67467-001PUS1_REPLACEMENT_DRAWINGS.pdf	150130 a466db54806df9ceb29dfddaf6a08d71b23c47	no	6
Warnings:					
Information:					
Total Files Size (in bytes):			164924		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057
	Filing Date		2012-09-25
	First Named Inventor	Cheong Choon Ng	
	Art Unit		
	Examiner Name		
	Attorney Docket Number		67467-009 PUS1

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	2270619		1942-01-20	A.G. Bowyer	
	2	2545409		1951-03-13	J.D. McCall	
	3	3377674		1968-04-16	R.F. Brassaw et al.	
	4	2134066		1938-10-25	E. Van Ness	
	5	1776561		1927-12-03	C. LA Croix	
	6	4629100		1986-12-16	Owens	
	7	3678709		1972-07-25	Nowicki et al.	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057		
	Filing Date		2012-09-25		
	First Named Inventor	Cheong Choon Ng			
	Art Unit				
	Examiner Name				
	Attorney Docket Number		67467-009 PUS1		

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John M. Siragusa/	Date (YYYY-MM-DD)	2013-10-09
Name/Print	John M. Siragusa	Registration Number	46174

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
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Electronic Acknowledgement Receipt

EFS ID:	17082651
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Donna Durant
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	09-OCT-2013
Filing Date:	25-SEP-2012
Time Stamp:	15:08:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	009PUS1_IDS_10_09_2013.pdf	612242 <small>071ab00413ea36535004eeb622bc984aa786a36b</small>	no	4

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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	0254258		1882-02-28	Barbour	
	2	0254288		1992-02-28	Dimmick	
	3	0782657		1905-02-14	Hubert	
	4	0843495		1907-02-05	Sander	
	5	1073226		1913-09-16	Freeman	
	6	1366212		1921-01-18	Pollard	
	7	1375119		1921-04-19	Stephen	
	8	1424458		1922-08-01	Fleisher	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		67467-009 PUS1	

	9	1599040		1926-09-07	Clisby	
	10	1994659		1935-03-19	Mascarenhas	
	11	2108424		1938-02-15	Bakely	
	12	2360416		1944-10-17	Gray	
	13	2703482		1955-03-08	Auran	
	14	3069739		1962-12-25	Jorgenson et al.	
	15	3438098		1969-04-15	Grabner	
	16	3476423		1969-11-04	Kentfield	
	17	3636987		1972-01-25	Forby	
	18	3672679		1972-06-27	Burns	
	19	3688357		1972-09-05	Nielsen et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

	20	3728762		1973-04-24	Hogg	
	21	3748706		1973-07-31	Doyel	
	22	3805345		1974-04-23	Antos	
	23	4032179		1977-06-28	Goss	
	24	4114892		1978-09-19	Csoka	
	25	4179129		1979-12-18	Loomis	
	26	4569108		1986-02-11	Schwab	
	27	4667965		1987-05-26	Helms, Jr.	
	28	5163946		1992-11-17	Li	
	29	5295280		1994-03-22	Hudson et al.	
	30	5328374		1994-07-12	Stevens	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

	31	5437459		1995-08-01	Kirby	
	32	5459905		1995-10-24	Voyre	
	33	5577299		1996-11-26	Thompson et al.	
	34	5639090		1997-06-17	Stevens	
	35	5713094		1998-02-03	Markey et al.	
	36	5927764		1999-07-27	Harriman	
	37	6065968		2000-05-23	Corliss	
	38	6122859		2000-09-26	Lazar	
	39	6129551		2000-10-10	Martin	
	40	6146144		2000-11-14	Fowler et al.	
	41	6171317		2001-01-09	Jackson et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

42	D570923		2008-06-10	Vazquez Gastellu	
43	6923026		2005-08-02	Clarke	
44	7506524		2009-03-24	Gustin	
45	7578146		2009-08-25	Gustin	
46	7909609		2011-03-22	Molin	
47	D330668		1992-11-03	Nagamatsu	
48	3665971		1972-11-27	Ilekes	
49	5231742		1993-08-03	Macbain	
50	5687775		1997-11-18	Thompson et al.	
51	8316894		2012-11-27	Schaub	
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	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	20090215013		2009-08-27	Molin	
	2	20100019495		2010-01-28	Oliveto	
	3	20110152946		2011-06-23	Frigg et al.	
	4	20110152946		2011-06-23	Frigg et al.	

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	1	2003-520083	JP		2003-07-02	D'Orica S.R.L.		<input type="checkbox"/>
	2	2004-520910	JP		2004-07-15	Louis Vuitton Malletier		<input type="checkbox"/>
	3	10-2001-0012609	KR		2001-02-15	Citizen Holdings Co., Ltd.		<input type="checkbox"/>
	4	10-2006-0042108	KR		2006-05-12	Montres Rado S.A.		<input type="checkbox"/>

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057
	Filing Date		2012-09-25
	First Named Inventor	Cheong Choon Ng	
	Art Unit		
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	Attorney Docket Number		67467-009 PUS1

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report and Written Opinion for PCT Application No. PCT/US2011/041553 mailed on February 23, 2012.	<input type="checkbox"/>
	2	International Preliminary Report on Patentability for PCT Application No. PCT/US2011/041553 mailed May 16, 2013.	<input type="checkbox"/>

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	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-009 PUS1

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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- See attached certification statement.
- The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- A certification statement is not submitted herewith.

SIGNATURE

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Signature	/John M. Siragusa/	Date (YYYY-MM-DD)	2013-09-06
Name/Print	John M. Siragusa	Registration Number	46174

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.



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Bibliographic data: JP2003520083 (A) — 2003-07-02

METHOD OF MANUFACTURING JEWELRY NETWORK STRUCTURES AND NETWORK STRUCTURES OBTAINED WITH SUCH METHOD

Inventor(s):

Applicant(s):

Classification:

- **international:** **A44C11/00; A44C25/00; A44C27/00;** (IPC1-7): A44C25/00; A44C27/00
- **European:** A44C11/00B

Application number: JP20010552742T 20000321

Priority number (s): WO2000IB00322 20000321; IT2000VI00014 20000119

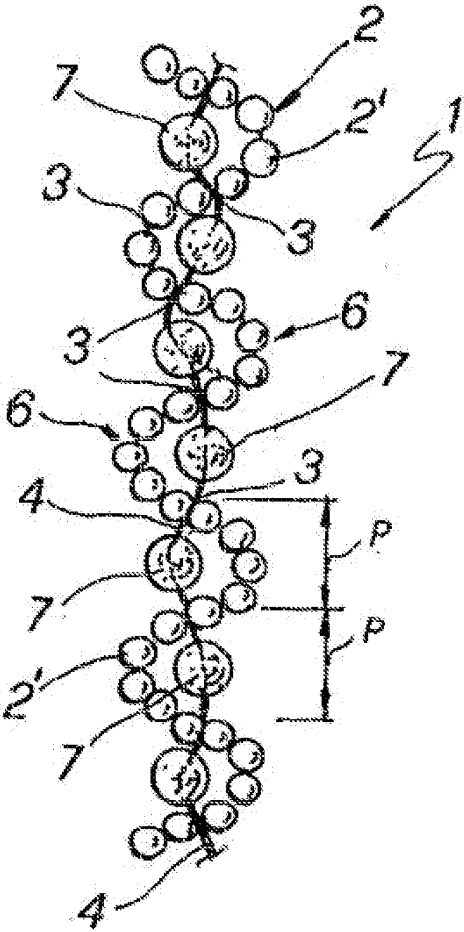
Also published as: WO0152683 (A1) TR200102640 (T1) ITVI200000014 (A1) EP1168939 (A1) EP1168939 (B1) more

Abstract not available for JP2003520083 (A)

Abstract of corresponding document: WO0152683 (A1)

Method of manufacturing of goldsmith network structure including the steps of providing a longitudinal warp member (2) constituted by a chain formed by one or more lines of links or modular elements and provided with interstices (3) between the links or modular elements, providing a weft member (4) constituted by a flexible threadlike core, inserting the weft member (4) in the warp member (2) along a direction substantially perpendicular to the longitudinal extension of the latter, at locations at predetermined distance (P, P', P'') from each other. The goldsmith network structure includes a longitudinal warp member (2) comprising a chain formed by one or more lines provided with interstices (3) between adjacent links or modular elements, and a weft member (4) comprising a flexible thread-like core inserted in the warp member (2) in a direction substantially perpendicular to the longitudinal direction of the latter at positions at predetermined distances (P, P', P'') from each other to define adjacent bights (6, 6') of the network structure.

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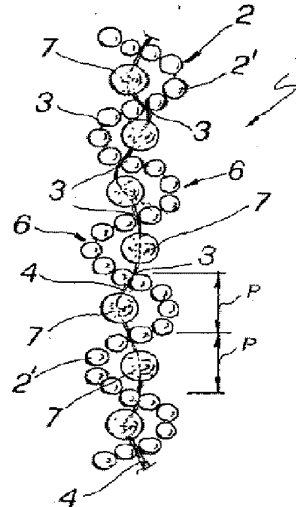
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最終頁に続く

(54)【発明の名称】 装身用網目構造物を製造する方法と該方法によって得られる網目構造物

(57)【要約】

装身用網目構造物を製造する方法であって、a) リンクまたはモジュール要素から成る一本以上の線によって形成され、前記リンクまたはモジュール要素の間に間隙(3)を有する鎖から構成される、縦方向のたて糸部材(2)を作り、b) 柔軟な糸状芯によって構成されるよこ糸部材(4)を作り、c) 前記よこ糸部材(4)を、前記たて糸部材(2)の長さ方向に実質的に直交する方向に沿って、互いに所定の距離(P、P'、P'')だけ離れた位置において、前記たて糸部材を貫通させる、各ステップから成ることを特徴とする方法。装身用網目構造物であって、隣り合うリンクまたはモジュール要素の間に間隙(3)を備えた一本以上の線によって形成される鎖から成る、縦方向のたて糸部材(2)、および前記たて糸部材(2)の長さ方向に実質的に直交する方向に、互いに所定の距離(P、P'、P'')だけ離れた位置において、前記たて糸部材を貫通して、前記網目構造物の隣り合う湾曲部(6、6')を定める、柔軟な糸状芯から成るよこ糸部材(4)、から成ることを特徴とする装身用網目構造物。



【特許請求の範囲】

【請求項1】装身用網目構造物を製造する方法であって、

- a) リンクまたはモジュール要素から成る一本以上の線によって形成される鎖から構成される、縦方向に延びるたて糸部材(2)であって、前記鎖が前記リンクまたはモジュール要素(2')の間に間隙(3)を有するたて糸部材を作り、
- b) 柔軟な糸状芯によって構成される少なくとも一本のよこ糸部材(4)を作り、
- c) 前記少なくとも一本のよこ糸部材(4)を、前記たて糸部材(2)の長さ方向に実質的に直交する方向に沿って、互いに所定の距離(P、P'、P'')だけ離れた位置において、前記たて糸部材の間隙を貫通させ、網目構造物を構成する隣り合う湾曲部(6、6')を形成させる、各ステップから成ることを特徴とする方法。

【請求項2】貫通位置の間の距離(P)が一定であることを特徴とする請求項1に記載の方法。

【請求項3】貫通位置の間の距離(P'、P'')が一定でないことを特徴とする請求項1に記載の方法。

【請求項4】複数の装身用要素(7、8)が、前記たて糸部材の隣り合う湾曲部に挿入されることを特徴とする請求項1に記載の方法。

【請求項5】前記装身用要素(7、8)が、玉(7)または貴石および半貴石から成ることを特徴とする請求項4に記載の方法。

【請求項6】前記装身用要素が、貴物質または半貴物質の管状スリーブ(8)から成ることを特徴とする請求項4に記載の方法。

【請求項7】前記たて糸部材(2)が、並んだ2本の線または“双対”線から成る二重鎖であることを特徴とする請求項1に記載の方法。

【請求項8】前記たて糸部材が、環状リンクを有する鎖であることを特徴とする請求項1に記載の方法。

【請求項9】よこ糸部材(4)を構成する前記芯が、“ロロ”プレスタイプの鎖であることを特徴とする請求項1に記載の方法。

【請求項10】装身用網目構造物であって、

(3) 003-520083 (P2003-520083A)

隣り合うリンクまたはモジュール要素の間に間隙(3)を備えた一本以上の線によって形成される鎖から成る、縦方向に延びるたて糸部材(2)、および

前記たて糸部材(2)の長さ方向に実質的に直交する方向に、互いに所定の距離(P、P'、P'')だけ離れた位置において、前記たて糸部材を貫通して、前記網目構造物の隣り合う湾曲部(6、6')を定める、柔軟な糸状芯から成るよこ糸部材(4)、

から成ることを特徴とする装身用網目構造物。

【発明の詳細な説明】

【0001】

本発明は、装身用網目構造物を製造する方法および該方法によって得られる装身用網目構造物に関する。

【0002】

現在、金ならびに他の貴金属および半貴金属の装身具は、いろいろな形と長さの複数のネックレス線を連結し、また編むことにより、金細工技術によって製造されている。

【0003】

現在使用されている製造方法によれば、連結は、実質的に平行なように複数のネックレスを配置し、随意に、これらを、開閉具が取り付けられる端、またはロケットが配置される中央部分で、結合することによつて、実現される。

【0004】

EP-A-0 495 100号明細書には、多数の金属線が互いに不規則に交差するように配列された、装身具のための金属メッシュが開示されている。GB-A-2 294 863号明細書には、一つの装身具が開示されており、該装身具は、装身具用の枠網目とメッシュ部材、および該枠に支持される、真珠のつらなりによって形成される網目構造物から成る。

【0005】

しかし、これまでのところ、ネックレス線を、互いにまたは他の線状部材と、実質的に直交する方向に結合して、非常に好ましい各種の美しい外観を有するよこ糸を与えるようにした設計をしたものはいない。

【0006】

本発明の目的は、単一または複数の線の形に配置された簡単な鎖から出発して、構造物全体に新しい各種の外観を与え、また同時に該構造物が著しく軽量で優雅なものになるようなやり方で、装身用網目構造物を製造する方法を案出することである。

【0007】

本発明の一つの好ましい側面によれば、請求項1に示すように、

装身用網目構造物を製造する方法であって、

- a) リンクまたはモジュール要素から成る一本以上の線によって形成される鎖から構成される、縦方向に延びるたて糸部材であって、前記鎖が前記リンクまたはモジュール要素の間には隙を有するたて糸部材を作り、
- b) 柔軟な糸状芯によって構成される少なくとも一本のよこ糸部材を作り、
- c) 前記少なくとも一本のよこ糸部材を、前記たて糸部材の長さ方向に実質的に直交する方向に沿って、互いに所定の距離だけ離れた位置において、前記たて糸部材の隙を貫通させ、網目構造物を構成する隣り合う湾曲部を形成させる、各ステップから成ることを特徴とする方法、が提供される。

【 0 0 0 8 】

本発明のさらなる側面によれば、請求項 10 に示すように、
装身用網目構造物であって、

隣り合うリンクまたはモジュール要素の間には隙を備えた一本以上の線によって形成される鎖から成る、縦方向に延びるたて糸部材、および

前記たて糸部材の長さ方向に実質的に直交する方向に、互いに所定の距離だけ離れた位置において、前記たて糸部材を貫通して、前記網目構造物の隣り合う湾曲部を定める、柔軟な糸状芯から成るよこ糸部材、
から成ることを特徴とする装身用網目構造物、が提供される。

【 0 0 0 9 】

本発明のさらなる特徴と利点は、本発明の方法によって得られる装身用網目構造物の好ましい非限定実施形態に関する以下の説明によって、さらにはっきりするであろう。この説明は、添付の図面を参照しつつ、非限定実施例に関して行う。

【 0 0 1 0 】

これらの図面において、全体を参照番号 1 で示す本発明の装身用網目構造物は、部材 2 を有する。この部材を以下では“たて糸”部材と呼ぶ。部材 2 は、実質的に、それぞれ縦方向の広がりとは大体正弦曲線形の形状とを有する、単一、二つもしくは“双対”、または複数配置の一本以上の鎖線によって構成されている。

【 0 0 1 1 】

たて糸鎖部材 2 は、リンクまたはモジュール要素 2' から成る一本以上の線によって形成されている。要素 2' は、長さ方向に沿って、これらの要素間に、たとえば、環状リンクまたはモジュール要素 2' の間の結合点に一致する、複数の間隙または空隙 3 を定めるように相互に連結されている。

【 0 0 1 2 】

本発明においては、部材 4 が備えられる。部材 4 を以下では、“よこ糸”部材と呼ぶ。この部材は、実質的に、柔軟な非常に細い糸状芯、たとえばプレスまたは槌打ちした“ロロ (r o l l e d)”金糸から成り、この部材は、一端において、針 5 または類似の工具たとえば金細工用の結合線 (s o l d e r i n g w i r e) に取り付けられる。

【 0 0 1 3 】

工具 5 の使用により、よこ糸状部材 4 は、たて糸部材 2 の長さ方向に実質的に直交する方向にたて糸部材 2 の間隙 3 を貫通させられて、網目が形成され、したがって隣り合う湾曲部またはループを有する装身用網目構造物が形成される。

【 0 0 1 4 】

好ましくは、よこ糸部材 4 の糸状芯は、鎖たて糸部材 2 と、一定値 P または非一定値 P'、P'' の所定距離だけ離れた部材 2 上の位置で交差して、必要に応じて等間隔 6 または非等間隔 6' の湾曲部が形成されるように配置する。

【 0 0 1 5 】

さらに、糸状部材 4 は、図には示さないが、たとえば花状または類似の形態をかたどるようなやり方でいろいろな植物の形を有するようにすることができる。

【 0 0 1 6 】

随意であるが、網目構造物の湾曲部の内部に、たとえば玉 7、管状スリーブ 8、または貴石もしくは半貴石 (図示せず) から成る装身用要素を挿入することができる。

【 0 0 1 7 】

さらに、前述のように、たて糸鎖部材 2 は、複数の互いに平行な線から成るようにして、鎖の同心円弧が定められるようにすることができる。

【 0 0 1 8 】

よこ糸状芯部材4を、たて糸鎖部材2の空隙 (r e c e s s) を貫通させたあと、端部材 (図示せず) を挿入して、二つの部材2、4の相互固定を行い、構造物全体を安定させることができる。

【 0 0 1 9 】

前記の製造方法で得られる網目構造物1は、たて糸部材2とよこ糸部材4との組合せから成る。たて糸部材2は、単一線または複数線の鎖から成り、この鎖は、複数の隣り合うリンクまたはモジュール要素2' によって形成され、要素2' は、相互に連結され、隣り合うリンクまたはモジュール要素2' の間に空隙が備えられる。また、よこ糸部材4は、たて糸部材2の長さ方向に実質的に直交する方向に、所定の相互距離だけ離れた位置で、たて糸部材2の空隙を貫通して、隣り合う湾曲部を有する網目構造を形成する、柔軟な糸状芯から成る。

【 0 0 2 0 】

以上、本発明の製造方法と網目構造物を、添付の図面を参照しつつ説明したが、これらには、特許請求の範囲に定める本発明の概念の範囲内にある多くの変更と変形を加えることができる。

【 0 0 2 1 】

すべての要素は、他の同等物で置き換えることができ、また事情に応じて、材料は別のものとすることができる。

【 0 0 2 2 】

本出願は、イタリア特許出願 V I 2 0 0 0 A 0 0 0 0 1 4 号 (2 0 0 0 年 1 月 1 9 日 提 出) に 基 づく 物 であり、該出願の開示事項は該出願を参照することにより、本明細書に明確に含まれており、また本明細書においては該出願の優先権を主張する。

【 図面の簡単な説明】

【 図 1 】

本発明による装身用網目構造物の第一の実施形態の側面図である。

【 図 2 】

図1の装身用網目構造物の正面図である。

【 図 3 】

本発明による装身用網目構造物の第二の実施形態の側面図である。

【図4】

図3の装身用網目構造物の正面図である。

【図5】

図1に示す構造物の製造法の第一ステップを示す図である。

【図6】

図1に示す構造物の製造法の第二ステップを示す図である。

【図7】

図1に示す構造物の製造法の第三ステップを示す図である。

【符号の説明】

- 1 装身用網目構造物
- 2 たて糸部材
- 2' リンクまたはモジュール要素
- 3 間隙
- 4 よこ糸部材
- 6、6' 湾曲部
- 7 装身用要素（玉）
- 8 装身用要素（管状スリーブ）
- P、P'、P'' 所定距離

【 図 1 】

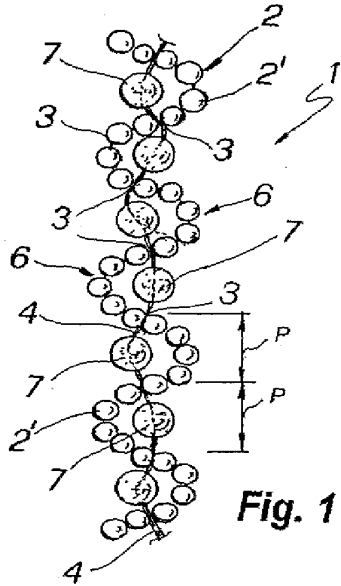


Fig. 1

【 図 2 】

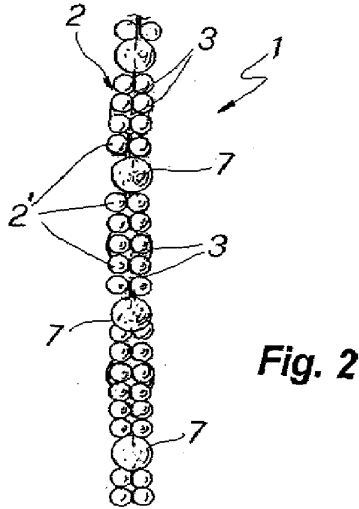
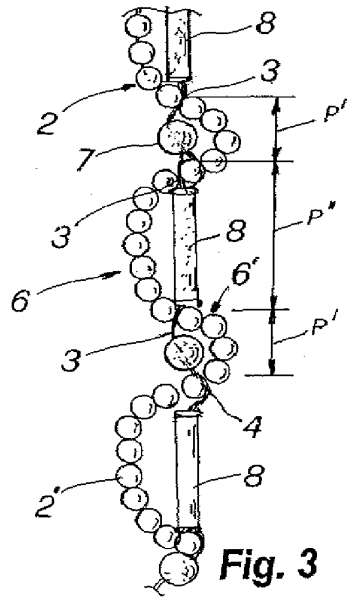
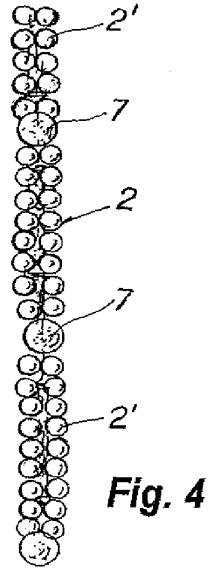


Fig. 2

【 図 3 】



【 図 4 】



【圖5】

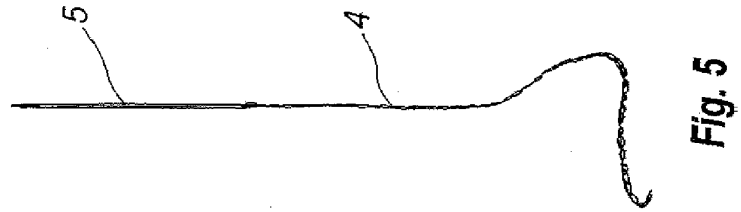


Fig. 5

【圖6】

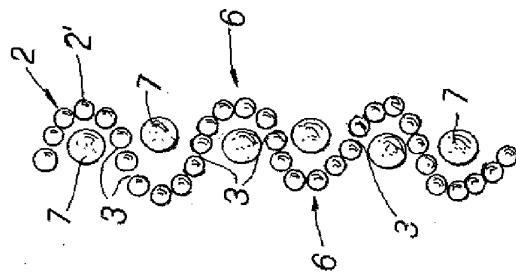


Fig. 6

【圖7】

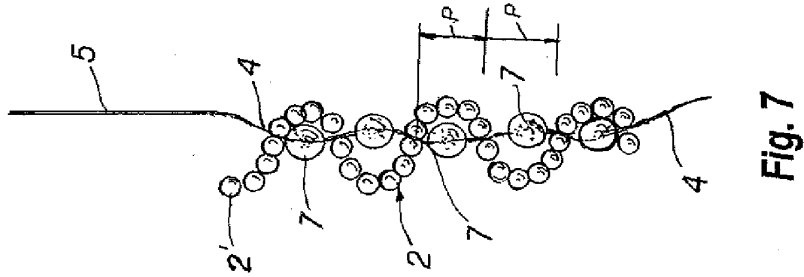


Fig. 7

【 国际調查報告 】

INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 7 A44C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 742 730 A (POWELL E) 3 July 1973 (1973-07-03) column 2, line 55 -column 3, line 39; figure 3	1,10
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<input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" documents published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family		
Date of the actual completion of the international search 25 August 2000		Date of mailing of the international search report 04/09/2000
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Form PCT/ISA210 (second sheet) (July 1992)

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JEWELRY CHAIN

Inventor(s):**Applicant(s):**

Classification: - **international:** A44C11/00; A44C5/00; (IPC1-7): A44C5/00
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Application number: JP20020570854T 20020308

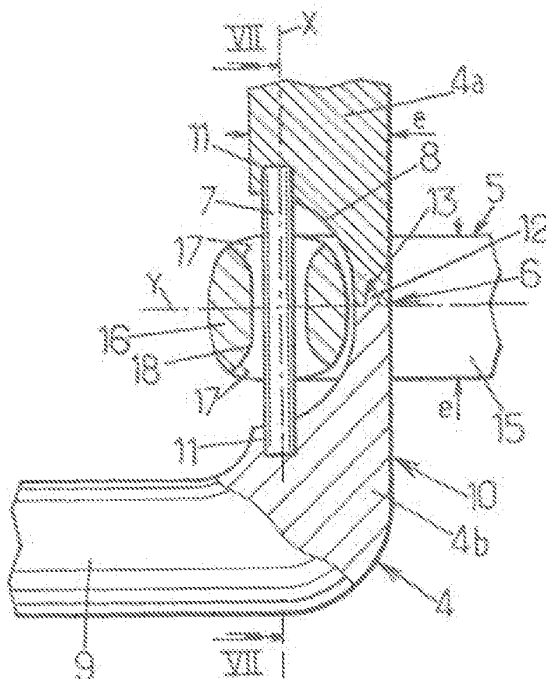
Priority number (s): FR20010003317 20010312; WO2002FR00839 20020308

Also published as: WO02071885 (A1), US2004079109 (A1), US7055343 (B2), HK1074980 (A1), FR2821724 (A1), more

Abstract not available for JP2004520910 (A)

Abstract of corresponding document: WO02071885 (A1)

A jewelry chain comprising links (4, 5) which are articulated in twos. Said chain consists of first links (4) each comprising two semi-links (4a, 4b) which are interassembled by means of welding and/or soldering, said first links (4) each extending essentially according to a plane (X, Y) and being pivotably linked to adjacent links (5) by means of pivots (7) all of which are parallel to the respective planes (X, Y) of the first links. The chain also comprises second links (5) which are alternately disposed with the first links, each of said second links forming a continuous ring extending essentially according to a plane which is perpendicular to the adjacent first links.



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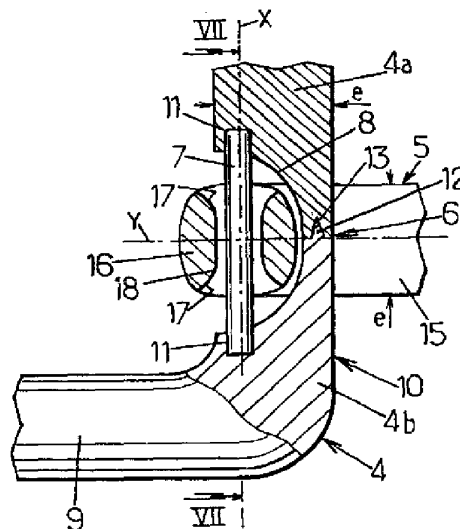
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(54) 【発明の名称】 装身具チェーン

(57) 【要約】

装身具チェーンがリンク4、5を含み、該リンクが、2個づつ連結されている。前記チェーンは、溶接及び/又は鑢付けにより互いに組立てられた2個のリンク半体4a、4bをそれぞれ含む複数第1リンク4で構成されている。該第1リンク4は、それぞれ実質的に1平面X、Y内に延在し、かつピン7により隣接リンク5に旋回可能に結合され、該ピンのすべてが、第1リンクの各平面X、Yと平行である。装身具チェーンは、また第2リンク5を含み、該第2リンクは第1リンクと交互に結合され、実質的に、各々が隣接第1リンクに対し直角の平面内に延在している。



【特許請求の範囲】

【請求項1】

2個づつ連結されたリンク(4, 5)を含む装身具チェーンであって、該装身具チェーンが、互いに組立てられる2個のリンク半体(4a, 4b)を各々有する複数の第1リンク(4)を含み、各第1リンク(4)が、実質的に平面(X, Y)内に延在し、かつ回転軸(7)を介して隣接するリンク(5)に回転可能に連結されており、該回転軸(7)が、すべて前記第1リンクの各平面(X, Y)と平行である装身具チェーンにおいて、前記装身具チェーンが、第2リンク(5)をも含み、該第2リンク(5)が前記第1リンク(4)とは異なっており、かつ前記第1リンク(4)と交互に配置され、前記第2リンク(5)の各々が連続的なリング形状をなし、かつ実質的に平面(Y, Z)内に延在し、前記第2リンク(5)の各平面(Y, Z)が、隣接する前記第1リンク(4)の平面(X, Y)に対し実質的に直角であり、前記各第1リンクのリンク半体(4a, 4b)が、溶接及び／又は鐙付けにより互いに組立てられており、それによって、材料の連続したリング形状が形成されていることを特徴とする装身具チェーン。

【請求項2】

前記第2リンク(5)が、それぞれ、前記第2リンクの平面(Y, Z)に対し直角に開けられた2つの貫通穴(18)を含み、前記第1リンク(4)が、それぞれ、前記回転軸を形成する2個のピン(7)を含み、該ピンが、互いに平行で、かつ前記第1リンクの平面と平行であり、前記第1と第2のリンクが、前記第2リンクの貫通穴(18)に前記第1リンクのピン(7)を嵌め込むことにより、2個づつ連結されている請求項1に記載された装身具チェーン。

【請求項3】

前記第1リンクの内側へ向かって開いており、かつ前記第1リンクを形成する2個の前記リンク半体(4a, 4b)の各々に形成されている2個の盲穴(11)へ、前記各第1リンク(4)のピン(7)が、それぞれ、挿入されている請求項2に記載された装身具チェーン。

【請求項4】

前記第1リンク(4)の各ピン(7)が、前記第1リンクを形成する2個の前記リンク半体(4a, 4b)に、溶接又は鐙付けによって固定されている請求項2又は請求項3に記載された装身具チェーン。

【請求項5】

前記各第1リンク(4)が2つの切欠き部(8)を含み、該切欠き部が前記第1リンク(4)の内側へ開いており、かつ前記第1リンクのピン(7)の1個が前記各切欠き部を横断しており、前記切欠き部の各々が、一部は、前記第1リンクを形成する前記リンク半体の一方(4a)に、一部は、前記第1リンクを形成する他方の前記リンク半体(4b)に形成されている請求項2から請求項4までのいずれか1項に記載された装身具チェーン。

【請求項6】

前記各第1リンクを形成するリンク半体(4a, 4b)が、前記第1リンクの2つの切欠き部の各々で、両端面(6a, 6b)を介して相互接触することにより、前記各第1リンク(4)に、隣接する前記第2リンク(5)の内側を貫通する部分(10)が形成されている請求項5に記載された装身具チェーン。

【請求項7】

前記端面(6a, 6b)が相互嵌め合いにより互いに協働している請求項6に記載された装身具チェーン。

【請求項8】

前記端面(6a, 6b)が互いに溶接されている請求項6又は請求項7に記載された装身

具チェーン。

【請求項9】

前記各第2リンク(5)の貫通穴(18)が未広がり端部を有する請求項2から請求項8までのいずれか1項に記載された装身具チェーン。

【請求項10】

前記各第2リンク(5)の貫通穴(18)の前記未広がり端部が、前記第2リンクに形成された溝部(17)にそれぞれ開いており、該溝部が、前記第2リンクの該溝部の形成されている部分(16)に対し、実質的に直角方向(Y)に延在している請求項9に記載された装身具チェーン。

【請求項11】

前記リンク(4, 5)が、2軸線づつ直角である3軸線(X, Y, Z)に沿って、隣接するリンクに対し前記各リンクが5~30度の隙間角が可能になるように十分な遊びをもって互いに連結されている請求項1から請求項10までのいずれか1項に記載された装身具チェーン。

【請求項12】

前記隙間角が10~20度である請求項11に記載された装身具チェーン。

【請求項13】

前記第1と第2のリンク(4, 5)が、すべて環形状を有しており、前記各リンクが内側空間を含み、該空間が、前記リンクの平面に属する直交する2方向で測定すると、1個のリンク厚さ(e)の2倍の大きさの寸法(1)を有し、前記リンクが、それぞれ隣接するリンクの内側空間を貫通している請求項1から請求項12までのいずれか1項に記載された装身具チェーン。

【発明の詳細な説明】

【技術分野】

【0001】

本発明は、装身具チェーンに関するものである。

より詳しく言えば、本発明は、2個づつ連結されたリンクを含む装身具チェーンに係わり、該チェーンが、相互に組立てられる2つのリンク半体を各々含む第1リンクを含み、第1リンクが、各々、実質的に一平面内に延在し、かつ隣接リンクに旋回軸を介して旋回可能に連結されており、該旋回軸が、すべて第1リンクの各平面と平行である装身具チェーンに関するものである。

【背景技術】

【0002】

EP-A-0313711号には、この形式の装身具チェーンの一例が開示されている。この装身具チェーンは第1リンクのみを含み、これら各第1リンクの2つのリンク半体は、リンク半体にそれぞれ形成された2つの溝部の簡単な相互係合によって相互組立てられ、リンク半体は、ピンに遊びを持たずに取り付けられることにより、互いに解離が防止される。ピンは、すべて平行であり、かつリンクを互いに連結させる。

この取付け形式は、ある場合には望ましいチェーン形式、すなわち隣接リンクが互いに直角であるチェーン形式には適用できない欠点を有する。

【0003】

更に、チェーンが、リンク半体に遊びを持たずにピンによる連結だけで相互連結されるので、前記の取付けは、時として弱いものとなる。

最後に、先行技術のこのチェーンは、互いに完全に平行なピンを中心として回転する以外に、リンク間の相対運動が不可能であるが、実際には、ある程度の運動の自由が望ましい場合がある。

【特許文献1】EP-A-0313711号公報

【発明の開示】

【発明が解決しようとする課題】

【0004】

したがって、本発明の目的は、とりわけ、前記欠点を除去し、以下の装身具チェーンを提供することにある。

隣接するリンクが、適当であれば、相互に直角をなし、好ましくは互いに連結される一方、各リンクの中心に空の空間が残された実質的に等寸法のリング形状である。

好ましくは、前記の先行技術によるチェーンより大きな機械的強度を有する。

適当であれば、隣接リンク間で、多数の回転軸を中心として一定自由度の運動が可能である。

【課題を解決するための手段】

【0005】

この目的を達成するために、本発明による当該装身具チェーンは、以下の特徴を有する。すなわち、該装身具チェーンは、第2リンクをも含み、該第2リンクが、第1リンクと異なっており、かつ第1リンクと交互に配置され、第2リンクの各々が、連続的な1つのリング形状をなし（この連続は、適当であれば、数片を互いに溶接又は銲付けすることで達成できる）、かつ実質的に一平面内に延在しており、これらの第2リンクの各平面は、隣接する第1リンクの平面と実質的に直角であり、各第1リンクのリンク半体が、溶接及び／又は銲付けにより互いに組立てられ、それによって材料の連続するリング形状をなしている。

【0006】

これらの構成により、以下の装身具チェーンが得られる。

リンクが2個づつ実質的に直角に保持され、リンクが、適当であれば、すべて実質的に等しく、かつ互いに連結される一方、前記リンクの中央には自由空間が残されている。

第1と第2のリンクが、それぞれ、材料の連続したリング形状をなすため、大きい強度を有する。

適当であれば、旋回軸を中心として単純な旋回の外にリンク間に遊びが存在し、それによりチェーンが、より大きなたわみ性を有する。

【0007】

本発明の好適実施例の場合、適当であれば、更に以下の構成の1つの及び／又は他の構成を用いることができる：

第2リンクが、それぞれ、第2リンクの平面に対して直角に開けられた2つの貫通穴を含み、かつ第1リンクが、それぞれ、2個のピンを含み、該ピンが互いに平行かつ第1リンクの平面と平行であり、第1リンクのピンが第2リンクの貫通穴に係合することで、第1と第2のリンクが、それぞれ連結される。

盲穴が、第1リンクの内側へ向かって開き、かつ第1リンクを形成する2つのリンク半体の各々に形成されており、各第1リンクのピンが、各々、2つの盲穴に嵌め込まれる。

【0008】

第1リンクの各ピンが第1リンクを形成する2個のリンク半体に溶接又は銲付けで固定される。

各第1リンクが2つの切欠き部を含み、該切欠き部が、第1リンクの内側へ向かって開き、かつ第1リンクのピンの1つにより横断され、切欠き部の各々が、一部は、第1リンクを形成するリンク半体の一方に形成され、一部は、第1リンクを形成する他方のリンク半体に形成される。

各第1リンクを形成するリンク半体が、第1リンクの2つの切欠き部の各々の2つの端面を介して相互接触している。

【0009】

各第1リンクが隣接する第2リンクの内側を貫通する部分を含むように、前記端面が相互嵌め合いにより協働する。

前記端面が互いに溶接される。

各第2リンクの貫通穴が未広がり状に端部に向かって広がっている。

各第2リンクの貫通穴の未広がりになった端部が、それぞれ、前記第2リンクに形成された溝部に開いており、これらの溝部が、第2リンクの溝部の形成された部分に対し実質的

に直角方向に延在する。

前記リンクが、2軸づつが直角をなす3軸線に沿って、隣接するリンクに対し各リンクが、5～30度の隙間角を有するの十分な遊びをもって互いに連結される。

【0010】

前記隙間角が10～20度である。

前記第1と第2のリンクが環形状を有し、各リンクが空の内側空間を含み、該空間が、リンクの平面に属する2直角方向で測定して、1個のリンク厚さの2倍の大きさの寸法を有し、前記リンクが、それぞれ隣接するリンクの内側空間を貫通する。

本発明のこの他の特徴及び利点は、添付図面を参照して、実施例の1つを以下に説明することにより明らかになるが、該実施例は、本発明を限定するものではない。

【実施例】

【0011】

図面では、同じ部材又は類似部材には同じ符号が付されている。

図1は、本発明の1実施例によるチェーン2を含むプレスレット1を示し、チェーン2には、図に示す実施例では、飾り3が保持されている。

図2に示すように、チェーン2は、第1および第2の金属製環状リンク4、5を交互に連結して形成され、該リンクは、2個づつ連結され、2個づつが実質的に直交する。これらのリンク4、5は、この場合、すべて概ね形状が同じであり、すなわち実質的に方形で角隅部に丸みが付与されており、互いに貫通する一方、各リンクの中央部は自由空間となっている。この自由空間は、リンクの太さよりも大きな寸法であることが好ましい。より一般的に言えば、各リンク4、5の中央の空間は、該リンクの平面に含まれる互いに直角の2方向において、リンクの厚さeより大きい寸法1(エル)を有する。図に示す実施例では、空の空間の寸法1(エル)は、当該リンク4、5の2方向X、Y又はY、Zで等しいが(図3及び図5)、適当であれば、この状況は変更してよい。同じように、各リンク4、5の厚さは、この場合、前記リンクの平面内で測定しても、該平面に対し直角方向で測定しても、等しいが、適当であれば、この状況は変更してもよい。

【0012】

図3に、第1リンク4のうちの1個が示される。第1リンク4は、2個のリンク半体4a、4bから成り、リンク半体の各々が平面X、Y内に延在し、該平面内のX、Yは、リンク4の側部9、10とそれぞれ平行な2つの直交する軸線である。

2個のリンク半体4a、4b間の結合部6では、リンク4の対向する両側部10に、リンクの内側へ向いて開いた切欠き部8が形成されている。これらの切欠き部8の各々を、金属製のピン7が横切っており、該ピンは、リンクの対応する側部10の長手方向軸線Xと平行であり、リンク4、5間の旋回軸となる。

図4に詳細に示すように、2個のリンク半体4a、4bの各々は、リンク4の完全な対向する両側部9と、対向両側部半体、すなわちリンク半体4aの場合は側部半体10a、リンク半体4bの場合は側部半体10bとで形成される。

【0013】

リンク半体の側部半体10a、10bは、それぞれ、各切欠き部8の2つの半体8a、8bを形成し、リンク半体の組立て時に結合部6を形成する対向端面6a、6bまで、互いの方へ延在している。

更に、リンク半体4a、4bの各々は、2つの盲穴11を含み、該盲穴は、リンクの内側へ向かって開いており、該盲穴内へは、ピン7の端部7a、7bが嵌め込まれる。

各ピン7の端部の一方の端部は、リンク4の取付け前に、2個のリンク半体4a、4bの一方の対応する盲穴11に嵌め込み、溶接される一方、各ピンの反対側の端部には、鑲滴14が溶融状態で被着され、凝固せしめられる(図4に示した実施例では、各リンク半体4a、4bがそれぞれ対応するリンクのピンの1個に取付けられるが、もちろん2個のピン7を、始めに片方のリンク半体に取付けてもよい)。

【0014】

次に、チェーン2を形成する場合、後述するように、ピン7が第2リンク5に嵌め込まれ

、鑛滴14の付着したピン端部が対応する盲穴11に嵌め込まれる（好ましくは強制的に）ことにより、リンク4のリンク半体4a, 4bが組立てられる。

このように作られたチェーン2は、次に、鑛滴14の融点を超えて加熱され、鑛滴が溶融される。このようにして、冷却後、第1リンク4を形成するリンク半体4a, 4bが、溶接及び鑛付けにより組立てられ（適当であれば、ピン7の両端を鑛付けして組立てることもできる）、これにより、第1リンク4は、それぞれ、材料が連続する1個のリング形状となり、すぐれた機械的強度を有する。

【0015】

好ましくは、側部半体10a, 10bの端面6a, 6bの一方にスパイク12を備え、他方の端面にはスパイク12を受容する盲穴13を備え、リンク半体4a, 4bの組立て時に嵌め合わせてもよい。この嵌め合わせは、一方では、リンク半体の適切な位置決めをする効果を有し、他方では、リンク4の機械的強度を更に増強するのに役立つ。

適当であれば、リンク半体の組立て後に、端面6a, 6bを溶接することもできる。適当であれば、この溶接は、ピン7の端部の溶接及び／又は鑛付けに代えることもできる。

【0016】

更に、図5に示すように、チェーン2の各第2リンク5は、実質的に平面Y, Z内に延在し（Zは前記の軸線XとYに対し直角の軸線である）、第1リンク4の側部9と平行な軸線Yに沿って延在する対向する両側部15と、第1リンクの側部10の長手方向軸線Xに対し実質的に直角の軸線Zに沿って延在する対向する両側部16とを有する。

第2リンク5の側部16の各々は、実質的にその中央に、軸線Yと実質的に平行な溝形状の2つの補強部17を有し、各側部16の溝部17は、第2リンク5の中央平面Y, Zに対し実質的に対称的に配置される。これらの溝部の各々の中心には、軸線Xと平行に貫通穴18が形成される。

【0017】

図6と図7に詳細に示すように、各貫通穴18は、遊びをもって、隣接第1リンク4のピン7の1個を受容している。更に、貫通穴18は、好ましくは、両端が未広がり形状を有し、貫通穴18の中央部から、溝部17に開いている端部にかけて未広がりになっている。最後に、第2リンク5の各側部16は、遊びをもって、対応する第1リンク4の対応する切欠き部8内に受容される。

これらの構成により、各第2リンク5は、嵌め込まれている各ピン7の軸線Xを中心として旋回できるだけでなく、制限された隙間（例えば30度、好ましくは10～20度）をもって、隣接第1リンク4に対し軸線Y, Zを中心として旋回できる。

【図面の簡単な説明】

【0018】

【図1】本発明の1実施例によるチェーンを含むプレスレットの略図。

【図2】図1のプレスレットに属するチェーンの拡大斜視図。

【図3】図2のチェーンの第1リンクの詳細図。

【図4】図3の第1リンクを製造する手順を示す図。

【図5】図2のチェーンの第2リンクの詳細図。

【図6】図5のV I - V I 線に沿って裁断した図2のチェーンの部分断面図。

【図7】図6のV I I - V I I 線に沿って裁断した部分断面図。

【符号の説明】

【0019】

- 1 プレスレット
- 2 チェーン
- 3 飾り
- 4 第1リンク
- 4a, 4b リンク半体
- 5 第2リンク
- 6 結合部

- 6 a, 6 b 対向端面
 - 7 ピン
 - 7 a, 7 b ピンの端部
 - 8 切欠き部
 - 8 a, 8 b 切欠き半体
 - 9, 10 第1リンクの側部
 - 10 a, 10 b リンク半体の側部半体
 - 11 盲穴
 - 12 スパイク
 - 13 盲穴
 - 14 鐵滴
 - 15, 16 第2リンク側部
 - 17 溝部
 - 18 貫通穴
- 【国際公開パンフレット】

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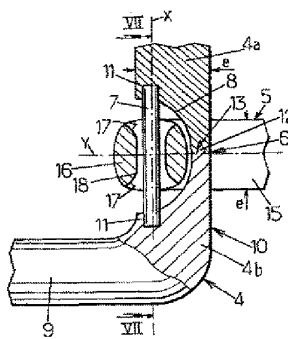
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[Suite sur la page suivante]

(54) Title: JEWELRY CHAIN
(54) Titre : CHAÎNE DE BIJOUTERIE

WO 02/071885 A1



(57) Abstract: A jewelry chain comprising links (4, 5) which are articulated in rows. Said chain consists of first links (4) each comprising two semi-links (4a, 4b) which are intermeshed by means of wedging and/or soldering, said first links (4) each extending essentially according to a plane (X, Y) and being proximately linked to adjacent links (5) by means of pins (7) all of which are juxtaposed to the respective planes (X, Y) of the first links. The chain also comprises second links (5) which are alternately disposed with the first links, each of said second links forming a continuous ring, extending essentially according to a plane which is perpendicular to the adjacent first links.

(57) Abrégé : Chaîne de bijouterie comportant des maillons (4, 5) articulés deux à deux, cette chaîne comportant des premiers maillons (4) qui comprennent chacun deux demi-maillons (4a, 4b) assemblés entre eux par soudure et/ou brasure, ces premiers maillons (4) s'articulant chacun essentiellement selon un plan (X, Y) et étant reliés de façon proximale aux maillons adjacents (5) par des pivots (7) tous maillons aux plans respectifs (X, Y) disposés par rapport aux maillons (5) épousés en alternance avec les premiers maillons, chacun des deuxièmes maillons formant un anneau continu et s'étendant essentiellement selon un plan perpendiculaire aux premiers maillons adjacents.

WO 02/071885 A1 

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WO 02/071885

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1

Chaîne de bijouterie.

La présente invention est relative aux chaînes de bijouterie.

5 Plus particulièrement, l'invention concerne une chaîne de bijouterie comportant des maillons articulés deux à deux, cette chaîne comportant des premiers maillons qui comprennent chacun deux demi-maillons assemblés entre eux, ces premiers maillons s'étendant chacun sensiblement selon
10 un plan et étant reliés de façon pivotante aux maillons adjacents, par des pivots tous parallèles aux plans respectifs desdits premiers maillons.

Le document EP-A-0 313 711 décrit un exemple d'une telle chaîne de bijouterie, comportant uniquement des
15 premiers maillons. Les deux demi-maillons de chacun de ces premiers maillons sont assemblés entre eux par simple emboîtement mutuel de deux rainures ménagées respectivement dans ces demi-maillons, les demi-maillons étant empêchés de se déboîter grâce à leur montage sans jeu sur des broches
20 toutes parallèles qui relient entre eux les maillons.

Ce type de montage présente l'inconvénient d'être incompatible avec une chaîne dont les maillons adjacents seraient perpendiculaires deux à deux, ce qui est souhaitable dans certains cas.

25 De plus, le montage en question peut parfois manquer de résistance, dans la mesure où la chaîne ne tient que grâce à l'engagement sans jeu des broches dans les demi-maillons.

Enfin, cette chaîne de l'art antérieur ne permet
30 pas d'autoriser un mouvement relatif entre les maillons autre que le pivotement autour des broches toutes parallèles entre elles : or, une certaine liberté de mouvement peut parfois s'avérer souhaitable.

La présente invention a donc notamment pour but de
35 pallier ces inconvénients, et de proposer une chaîne de

WO 02/071885

PCT/FR02/00839

2

bijouterie :

- dont les maillons adjacents puissent être le cas échéant perpendiculaires deux à deux, avantageusement en formant des anneaux de tailles sensiblement identiques
- 5 engagés les uns dans les autres en laissant un espace vide au centre de chaque anneau,
- qui présente de préférence une meilleure résistance mécanique que les chaînes susmentionnées de l'art antérieur,
- 10 - et qui puisse le cas échéant présenter une certaine liberté de mouvement selon plusieurs axes de rotation entre maillons adjacents.

A cet effet, selon l'invention, une chaîne de bijouterie du genre en question est caractérisée en ce

15 qu'elle comporte en outre des deuxièmes maillons différents des premiers maillons et disposés en alternance avec lesdits premiers maillons, chacun des deuxièmes maillons formant un anneau continu (cette continuité pouvant le cas échéant être obtenue par soudure ou brasage de plusieurs

20 pièces entre elles) et s'étendant sensiblement selon un plan, les plans respectifs de ces deuxièmes maillons étant sensiblement perpendiculaires aux plans des premiers maillons adjacents, et les demi-maillons de chaque premier maillon étant assemblés entre eux par soudure et/ou brasure

25 en formant ainsi un anneau continu de matière.

Grâce à ces dispositions, on obtient une chaîne de bijouterie :

- dont les maillons sont maintenus sensiblement perpendiculaires deux à deux, ces maillons pouvant le cas
- 30 échéant être tous sensiblement identiques et engagés les uns dans les autres en laissant un espace libre au centre desdits maillons,
- qui présente une grande résistance compte tenu du fait que les premiers et deuxièmes maillons forment
- 35 chacun un anneau continu de matière,

WO 02/071885

PCT/FR02/00839

3

- et qui autorise le cas échéant un jeu entre les maillons en dehors du simple pivotement autour des pivots, ce qui permet alors d'obtenir une plus grande souplesse de la chaîne.

5 Dans des modes de réalisation préférés de l'invention, on peut éventuellement avoir recours en outre à l'une et/ou à l'autre des dispositions suivantes :

- les deuxièmes maillons comportent chacun deux trous traversants percés perpendiculairement aux plans
10 desdits deuxièmes maillons, et les premiers maillons comportent chacun deux goupilles parallèles entre elles et parallèles aux plans desdits premiers maillons, les premiers et deuxièmes maillons étant articulés deux à deux par engagement des goupilles des premiers maillons dans les
15 trous traversants des deuxièmes maillons ;

- les goupilles de chaque premier maillon sont emboîtées chacune dans deux trous borgnes débouchant vers l'intérieur dudit premier maillon et ménagés respectivement dans chacun des deux demi-maillons constituant ledit
20 premier maillon ;

- chaque goupille d'un premier maillon est solidarisée par soudage ou brasage avec les deux demi-maillons constituant ledit premier maillon ;

- chaque premier maillon comporte deux échancrures
25 ouvertes vers l'intérieur du premier maillon et traversées chacune par l'une des goupilles dudit premier maillon, chacune de ces échancrures étant ménagée pour partie dans l'un des demi-maillon constituant ledit premier maillon et pour partie dans l'autre demi-maillon constituant ledit
30 premier maillon ;

- les demi-maillons constituant chaque premier maillon sont en contact mutuel par deux faces d'extrémité, au niveau de chacune des deux échancrures dudit premier maillon ;

35 - lesdites faces d'extrémités coopèrent par

WO 02/071885

PCT/FR02/00839

4

emboîtement mutuel, de sorte que chaque premier maillon comporte une portion passant à l'intérieur d'un deuxième maillon adjacent ;

- 5 - lesdites faces d'extrémités sont soudées entre elles ;
- les trous traversants de chaque deuxième maillon présentent des extrémités évasées ;
- les extrémités évasées des trous traversants de chaque deuxième maillon débouchent respectivement dans des gorges ménagées dans lesdits deuxième maillons, ces gorges s'étendant dans une direction sensiblement perpendiculaire à une portion dudit deuxième maillon dans laquelle elles sont ménagées ;
- 15 - les maillons sont articulés les uns aux autres avec un jeu suffisant pour autoriser des débattements angulaires compris entre 5 et 30 degrés de chaque maillon par rapport à un maillon adjacent, selon trois axes perpendiculaires deux à deux ;

- 20 - lesdits débattements angulaires sont compris entre 10 et 20 degrés ;
- les premiers et deuxième maillons ont tous des formes annulaires, chaque maillon comportant un espace intérieur creux qui présente des dimensions, mesurées selon deux directions perpendiculaires appartenant au plan dudit maillon, qui sont supérieures à deux fois une épaisseur
- 25 d'un maillon, lesdits maillons pénétrant respectivement dans les espaces intérieurs creux des maillons adjacents.

D'autres caractéristiques et avantages de l'invention apparaîtront au cours de la description suivante d'une de ses formes de réalisation, donnée à titre d'exemple non limitatif, en regard des dessins joints.

Sur les dessins :

- 30 - la figure 1 est une vue schématique d'un bracelet comportant une chaîne selon une forme de
- 35 réalisation de l'invention,

WO 02/071885

PCT/FR02/00839

5

- la figure 2 est une vue agrandie en perspective de la chaîne appartenant au bracelet de la figure 1,
- la figure 3 est une vue de détail d'un premier maillon de la chaîne de la figure 2,
- 5 - la figure 4 est une vue illustrant le mode de fabrication du premier maillon de la figure 3,
- la figure 5 est une vue de détail d'un deuxième maillon de la chaîne de la figure 2,
- la figure 6 est une vue partielle en coupe de la
- 10 chaîne de la figure 2, la coupe étant prise selon la ligne VI - VI de la figure 5,
- et la figure 7 est une vue partielle en coupe selon la ligne VII - VII de la figure 6.

Sur les différentes figures, les mêmes références

15 désignent des éléments identiques ou similaires.

La figure 1 représente un bracelet 1 comprenant une chaîne 2 selon une forme de réalisation de l'invention qui, dans l'exemple représenté, porte des breloques 3.

- Comme représenté sur la figure 2, la chaîne 2 est
- 20 formée par une alternance de premiers et deuxièmes maillons métalliques 4, 5 en forme d'anneaux qui sont articulés deux à deux et sensiblement perpendiculaires deux à deux. Ces maillons 4, 5 sont ici tous de forme générale identique, sensiblement carrée à coins arrondis et ils pénètrent les
- 25 uns dans les autres en laissant un espace libre au centre de chaque maillon. Cet espace libre présente de préférence une dimension supérieure à l'épaisseur des maillons. Plus généralement, l'espace creux au centre de chaque maillon 4, 5 présente des dimensions 1 supérieures à une épaisseur e
- 30 d'un maillon, selon deux directions perpendiculaires entre elles comprises dans le plan dudit maillon. Dans l'exemple représenté sur les dessins, les dimensions 1 de l'espace creux sont identiques selon les deux directions X, Y ou Y, Z du maillon 4, 5 considéré (voir figures 3 et 5), mais il
- 35 pourrait éventuellement en aller autrement. De même,

WO 02/071885

PCT/FR02/00839

6

L'épaisseur e de chaque maillon 4, 5 est ici identique qu'elle soit mesurée dans le plan dudit maillon ou perpendiculairement à ce plan, mais il pourrait également en aller autrement, le cas échéant.

5 Les premiers maillons 4, dont l'un est représenté sur la figure 3, sont constitués de deux demi-maillons 4a, 4b s'étendant chacun selon un plan X, Y où X et Y sont deux axes perpendiculaires qui sont parallèles respectivement aux côtés 9, 10 du maillon 4.

10 Au niveau des jonctions 6 entre les deux demi-maillons 4a, 4b, sur deux côtés opposés 10 du maillon 4, ce maillon forme des échancrures 8 ouvertes vers l'intérieur dudit maillon. Chacune de ces échancrures 8 est traversée par une goupille métallique 7 qui est parallèle à l'axe longitudinal X du côté correspondant 10 du maillon, et qui sert d'axe de rotation entre les maillons 4, 5.

15 Comme on peut le voir plus en détail sur la figure 4, chacun des deux demi-maillons 4a, 4b forme donc deux côtés opposés 9 complets du maillon 4 et deux demi-côtés opposés, respectivement 10a pour le demi-maillon 4a et 10b pour le demi-maillon 4b.

20 Les demi-côtés 10a, 10b des demi-maillons forment respectivement deux moitiés 8a, 8b, de chacune des échancrures 8 et s'étendent l'un vers l'autre jusqu'à des faces d'extrémité en regard 6a, 6b qui forment les jonctions 6 susmentionnées lorsque les demi-maillons sont assemblés.

25 De plus, chacun des demi-maillons 4a, 4b comporte deux trous borgnes 11 ouverts vers l'intérieur du maillon et dans lesquels sont emboîtées les extrémités 7a, 7b des goupilles 7.

30 Avant le montage des maillons 4, l'une des extrémités de chaque goupille 7 est emboîtée et soudée dans le trou borgne 11 correspondant d'un des deux demi-maillons 35 4a, 4b, tandis qu'une goutte de brasure 14 est déposée à

WO 02/071885

PCT/FR02/00839

7

l'état fondu puis solidifiée à l'extrémité opposée de chaque goupille (dans l'exemple représenté sur la figure 4, chaque demi-maillon 4a, 4b est ainsi assemblé à l'une des goupilles 7 du maillon correspondant, mais bien entendu, les deux goupilles 7 pourraient ainsi être assemblées à l'avance au même demi-maillon).

Par la suite, lors du montage de la chaîne 2, les demi-maillons 4a, 4b des maillons 4 sont assemblés par emboîtement (de préférence à force) des extrémités des goupilles 7 dotées des gouttes de brasura 14 dans les trous borgnes 11 correspondants, tout en engageant lesdites goupilles 7 dans les deuxièmes maillons 5, comme il sera expliqué ci-après.

Puis on chauffe la chaîne 2 ainsi réalisée au-dessus du point de fusion des gouttes de brasura 14, qui fondent alors. Ainsi, après refroidissement, les demi-maillons 4a, 4b formant les premiers maillons 4 sont assemblés entre eux par soudage et brasage (le cas échéant, l'assemblage pourrait être réalisé par brasage aux deux extrémités des goupilles 7), de sorte que les premiers maillons 4 forment chacun un anneau de matière continue et présentent une excellente résistance mécanique.

Avantageusement, les faces d'extrémité 6a, 6b des demi-côtés 10a, 10b, peuvent être dotées les unes, de picots 12 et les autres, de trous borgnes 13 recevant les picots 12 par emboîtement lors de l'assemblage des demi-maillons 4a, 4b. Cet emboîtement a pour effet, d'une part, de favoriser le bon positionnement des demi-maillons et, d'autre part, d'augmenter encore la résistance mécanique du maillon 4.

Eventuellement, il serait également possible de souder les faces d'extrémité 6a, 6b après assemblage des demi-maillons. Ce soudage pourrait même, le cas échéant, se substituer au soudage et/ou au brasage des extrémités des goupilles 7.

WO 02/071885

PCT/FR02/00839

8

Par ailleurs, comme représenté sur la figure 5, chaque deuxième maillon 5 de la chaîne 2 s'étend sensiblement selon un plan Y, Z (Z étant un axe perpendiculaire aux axes X et Y susmentionnés) et présente deux côtés opposés 15 s'étendant selon l'axe Y parallèlement aux côtés 9 des premiers maillons 4, et deux côtés opposés 16 s'étendant selon l'axe Z sensiblement perpendiculairement à l'axe longitudinal X des côtés 10 des premiers maillons.

10 Chacun des côtés 16 des deuxièmes maillons 5 comporte, sensiblement en son centre, deux renforcements 17 en forme de gorges sensiblement parallèles à l'axe Y, les gorges 17 de chaque côté 16 étant disposées de façon sensiblement symétrique par rapport au plan moyen Y, Z du
15 deuxième maillon 5. Au centre de chacune de ces gorges est ménagé un trou traversant 18, parallèle à l'axe X.

Comme on peut le voir plus en détail sur les figures 6 et 7, chaque trou 18 reçoit avec jeu l'une des goupilles 7 d'un premier maillon 4 adjacent. De plus, le
20 trou 18 présente avantageusement une double forme divergente, s'évasant depuis la partie médiane du trou 18 jusqu'aux extrémités de ce trou, qui débouchent dans les gorges 17. Enfin, chaque côté 16 des deuxièmes maillons 5 est reçu avec jeu dans l'échancrure correspondante 8 du
25 premier maillon correspondant 4.

Grâce à ces dispositions, chaque deuxième maillon 5 peut non seulement pivoter autour de l'axe X de chaque goupille 7 sur laquelle il est engagé, mais également pivoter avec un débattement limité (par exemple, 5 à 30°,
30 avantageusement 10 à 20°) autour des axes Y et Z par rapport aux premiers maillons 4 adjacents.

WO 02/071885

PCT/FR02/00839

9

REVENDICATIONS

1. Chaîne de bijouterie comportant des maillons (4,5) articulés deux à deux, cette chaîne comportant des premiers maillons (4) qui comprennent chacun deux demi-maillons (4a,4b) assemblés entre eux, ces premiers maillons (4) s'étendant chacun sensiblement selon un plan (X,Y) et étant reliés de façon pivotante aux maillons adjacents (5) par des pivots (7) tous parallèles aux plans respectifs (X,Y) desdits premiers maillons.
- 10 caractérisée en ce qu'elle comporte en outre des deuxièmes maillons (5) différents des premiers maillons (4) et disposés en alternance avec lesdits premiers maillons, chacun des deuxièmes maillons (5) formant un anneau continu et s'étendant sensiblement selon un plan (Y,Z), les plans respectifs (Y,Z) de ces deuxièmes maillons (5) étant sensiblement perpendiculaires aux plans (X,Y) des premiers maillons (4) adjacents, et les demi-maillons (4a,4b) de chaque premier maillon étant assemblés entre eux par soudure et/ou brasure en formant ainsi un anneau continu de matière.
2. Chaîne selon la revendication 1, dans laquelle les deuxièmes maillons (5) comportent chacun deux trous traversants (18) percés perpendiculairement aux plans (Y,Z) desdits deuxièmes maillons, et les premiers maillons (4) comportent chacun deux goupilles (7) formant lesdits pivots, qui sont parallèles entre elles et parallèles aux plans desdits premiers maillons, les premiers et deuxièmes maillons étant articulés deux à deux par engagement des goupilles (7) des premiers maillons dans les trous traversants (18) des deuxièmes maillons.
3. Chaîne selon la revendication 2, dans laquelle les goupilles (7) de chaque premier maillon (4) sont emboîtées chacune dans deux trous borgnes (11) débouchant vers l'intérieur dudit premier maillon et ménagés
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WO 02/1885

PCT/FR02/0839

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respectivement dans chacun des deux demi-maillons (4a,4b) constituant ledit premier maillon.

4. Chaîne selon la revendication 2 ou la revendication 3, dans laquelle chaque goupille (7) d'un premier maillon (4) est solidarisée par soudage ou brasage avec les deux demi-maillons (4a,4b) constituant ledit premier maillon.

5. Chaîne selon l'une quelconque des revendications 2 à 4, dans laquelle chaque premier maillon (4) comporte deux échancrures (8) ouvertes vers l'intérieur du premier maillon et traversées chacune par l'une des goupilles (7) dudit premier maillon, chacune de ces échancrures étant ménagée pour partie dans l'un (4a) des demi-maillon constituant ledit premier maillon et pour partie dans l'autre demi-maillon (4b) constituant ledit premier maillons.

6. Chaîne selon la revendication 5, dans laquelle les demi-maillons (4a,4b) constituant chaque premier maillon sont en contact mutuel par deux faces d'extrémité (6a,6b), au niveau de chacune des deux échancrures dudit premier maillon, de sorte que chaque premier maillon (4) comporte une portion (10) passant à l'intérieur d'un deuxième maillon (5) adjacent.

7. Chaîne selon la revendication 6, dans laquelle lesdites faces d'extrémités (6a,6b) coopèrent par emboîtement mutuel.

8. Chaîne selon la revendication 6 ou la revendication 7, dans laquelle lesdites faces d'extrémités (6a,6b) sont soudées entre elles.

9. Chaîne selon l'une quelconque des revendications 2 à 8, dans laquelle les trous traversants (18) de chaque deuxième maillon (5) présentent des extrémités évasées.

10. Chaîne selon la revendication 9, dans laquelle les extrémités évasées des trous traversants (18) de chaque deuxième maillon (5) débouchent respectivement dans des

WO 02/071885

PCT/FR02/00839

11

gorges (17) ménagées dans lesdits deuxièmes maillons, ces gorges s'étendant dans une direction (Y) sensiblement perpendiculaire à la portion (16) dudit deuxième maillon dans laquelle elles sont ménagées.

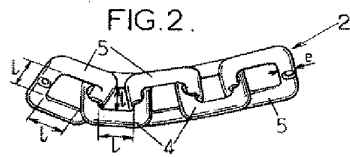
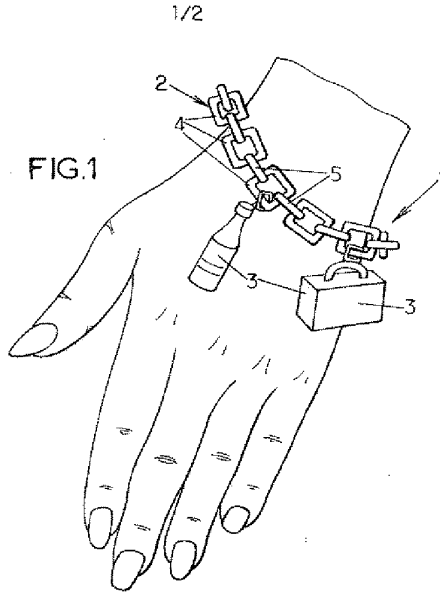
5 11. Chaîne selon l'une quelconque des revendications précédentes, dans laquelle les maillons (4,5) sont articulés les uns aux autres avec un jeu suffisant pour autoriser des débattements angulaires compris entre 5 et 30 degrés de chaque maillon par rapport
10 à un maillon adjacent, selon trois axes (X,Y,Z) perpendiculaires deux à deux.

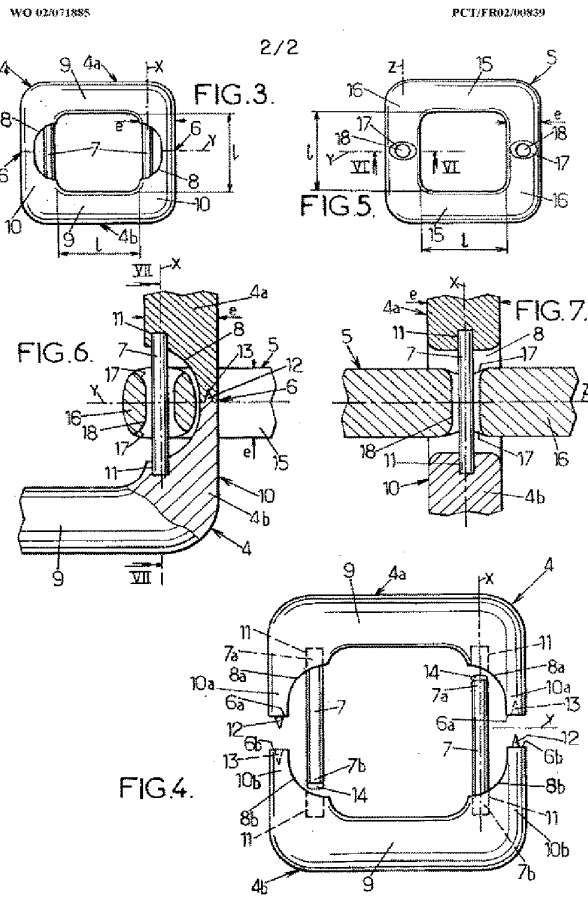
12. Chaîne selon la revendication 11, dans laquelle lesdits débattements angulaires sont compris entre 10 et 20 degrés.

15 13. Chaîne selon l'une quelconque des revendications précédentes, dans laquelle les premiers et deuxièmes maillons (4,5) ont tous des formes annulaires, chaque maillon comportant un espace intérieur creux qui présente des dimensions (l), mesurées selon deux directions
20 perpendiculaires appartenant au plan dudit maillon, qui sont supérieures à deux fois une épaisseur (e) d'un maillon, lesdits maillons pénétrant respectivement dans les espaces intérieurs creux des maillons adjacents.

WO 02/071885

PCT/FR02/00839





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According to International Patent Classification (IPC) or to both national classification and IPC		
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 640 124 A (BAUWÉDE MAXENCE V D) 15 June 1990 (1990-06-15) page 1, line 21 - line 26 page 3, line 18 - page 4, line 6; figure 1	1, 2, 5-8
A	DE 87 10 625 U (HAUDA) 17 September 1987 (1987-09-17) page 7, line 10 - line 19; claims 1, 2; figure 1	1-4
A	WD 97 22275 A (BENZ KARL JOSEF) 26 June 1997 (1997-06-26) page 2, line 7 - page 3, line 5; figure 2	1, 2
A	DE 94 16 952 U (WELLENDORFF ALEX DR FA) 12 January 1995 (1995-01-12) page 1, paragraph 3 page 3, paragraph 2; figure	1, 11
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reference to patent family members				PCT/FR 02/00839	
Patent document cited in search report	Publication date	Patent family member(s)	Publication date	Patent family member(s)	Publication date
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A. CLASSEMENT DE L'OBJET DE LA DEMANDE CIB 7 A44C11/00		Donnée internationale No PCT/FR 02/00839
Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et le CIB		
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A	DE 87 10 625 U (HAUDA) 17 septembre 1987 (1987-09-17) page 7, ligne 10 - ligne 19; revendications 1, 2; figure 1 ---	1-4
A	NO 97 22275 A (BENZ KARL JOSEF) 26 Juin 1997 (1997-06-26) page 2, ligne 7 - page 3, ligne 5; figure 2 --- ---	1, 2
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Catégorie	Identification des documents cités, avec, le cas échéant, l'indication des passages pertinents	N. des revendications visées
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Renseignements relatifs aux familles de brevets				PCT/FR 02/00839	
Document brevet cité ou rapport de recherche		Date de publication	Membre(s) de la famille de brevets		Date de publication
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DE 2203277	A	02-08-1973	DE 2203277 A1		02-08-1973

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(72)発明者 クローヴァ、フランチェスカ
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심사청구 : 없음

(54) 밴드 링크 연결 구조체 및 장신구 밴드

요약

본 발명에 따라서, 제1 구멍(14)이 있는 중앙 연결부(13)와 상기 제1 구멍보다 큰 직경의 제2 구멍이 있는 한 쌍의 외측 연결부(11)가 마련된 링크(10)와, 한 쌍의 핀(20)이 제공된다. 상기 각 핀에는 상기 제1 구멍과 제2 구멍에 삽입되는 축(24)과, 상기 제2 구멍 및 제3 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부(25)와, 상기 축과 억지 끼워맞춤부 사이에 테이퍼 형태로 형성된 목부가 포함되어 있다. 상기 축을 상기 제1 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제3 구멍에 억지 끼워맞춤으로써, 인접하는 링크와 링크가 연결된다.

이해도

도 1

도 2

기술분야

본 발명은 밴드의 링크(link)와 핀을 연결하는 연결 구조체 및 장신구(裝身具) 밴드에 관한 것으로서, 특히 핀과 링크의 연결부에 특징이 있는 연결 구조체에 관한 것이다.

배경기술

종래에, 링크와 링크를 핀으로 연결하여 손목 시계줄(watch band, 이하 '시계줄'이라 한다)을 제작하는 기술이 공지되어 있다.

도 15에는 종래의 시계줄의 일부가 도시되어 있다. 핀(53)의 양단부에는 널링 가공된 부분(knurl, 이하 '널링부'라 한다.) (54)이 있다. 상기 핀(53)은 중간 링크(51a)의 구멍 및 연결 링크(51b)의 구멍에 회전 가능하게 삽입되어 있고, 상기 널링부(54)는 각 측면 링크(51)의 구멍(52)에 억지 끼워맞춤(force fit)되어 있다. 이처럼, 링크를 핀으로 연결함으로써, 시계줄이 형성된다.

그러나, 널링부(54)는 마모되므로, 구멍(52)에 억지 끼워 맞춘 상태가 느슨하게 된다. 따라서, 핀(53)이 구멍(52)으로부터 이탈되는 문제가 있다.

도 16에 도시된 시계줄에 있어서는, 한 쌍의 핀(61)이 중간 링크(62b)의 구멍 및 연결 링크(63)의 구멍에 삽입되어 있고, 각 핀(61)의 널링부(61a)는 측면 링크(62a, 62c)의 구멍에 억지 끼워맞춤되어 있다. 장식판(64)이 나사(65)에 의해 상기 측면 링크(62a)의 외면에 고정되어 있다.

그러나, 널링부(61a)가 마모되므로, 상기 측면 링크의 구멍에 억지 끼워맞춘 상태가 느슨하게 된다. 따라서, 핀(61)이 상기 구멍으로부터 이탈하여 시계줄이 분리되는 문제가 있다.

상기 종래 기술에 있어서는, 핀이 측면 링크로부터 이탈되는 문제를 해결할 수가 없다.

또한, 링크와 핀을 정확히 가공할 필요가 있고, 부품의 수가 증가되는 문제가 있다.

본 발명의 목적은 링크와 핀의 연결 강도를 증대시킨 링크와 핀의 연결 구조체를 제공하는 것이다.

본 발명의 다른 목적은 적은 수의 부품으로 링크와 핀의 연결 강도를 증대시킨 장신구 밴드를 제공하는 것이다.

제1 실시예

본 발명에 따른 밴드 링크 연결 구조체는,

링크의 한 측면의 중앙부로부터 상기 밴드 링크 연결 구조체의 길이 방향으로 돌출되는 중앙 연결부와, 링크의 다른 측면으로부터 상기 길이 방향과 반대 방향으로 돌출되는 한 쌍의 외측 연결부가 마련된 링크와;

상기 중앙 연결부에 형성된 한 쌍의 제1 구멍과;

상기 외측 연결부의 내측으로 개방된 상태로 이 외측 연결부 각각에 형성되고, 상기 제1 구멍과 직경이 같은 제2 구멍과;

상기 외측 연결부의 외측으로 개방된 상태로 이 외측 연결부에 형성되고, 상기 제2 구멍과 동축이며 제2 구멍보다 직경이 큰 제3 구멍과;

인접하는 링크와 링크를 연결하는 한 쌍의 핀으로서, 각각의 핀은 상기 제1 구멍과 제2 구멍에 삽입되는 축과, 상기 제2 구멍 및 제3 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 억지 끼워맞춤부 사이에 테이퍼 형태로 형성된 목부(neck portion)를 포함하는 한 쌍의 핀

을 포함하며,

상기 축을 상기 제1 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제3 구멍에 억지 끼워맞춤으로써, 상기 인접하는 링크와 링크가 연결되는 것을 특징으로 한다.

상기 목부는 상기 억지 끼워맞춤부를 향해 테이퍼진다.

상기 목부는 상기 축을 향해 테이퍼질 수도 있다.

본 발명의 다른 실시예에 따른 밴드 링크 연결 구조체는

내측 링크와;

상기 내측 링크 양측의 한 쌍의 외측 링크와;

상기 내측 링크를 관통하여 형성된 제1 구멍과;

상기 외측 링크의 내측으로 개방된 상태로 이 외측 링크 각각에 형성되고, 상기 제1 구멍의 직경과 동일한 직경의 제2 구멍과;

상기 제2 구멍과 동축으로 상기 외측 링크에 형성되고, 상기 제2 구멍보다 작은 직경의 제3 구멍과;

상기 제3 구멍에 삽입되는 축과, 상기 제2 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 억지 끼워맞춤부 사이에 테이퍼 형태로 형성된 목부를 포함하며, 상기 내측 링크와 외측 링크를 연결하는 핀

을 포함하며,

상기 축을 상기 제3 구멍에 삽입하고 상기 끼워맞춤부를 상기 제2 구멍에 억지 끼워맞춤으로써, 상기 내측 링크와 외측 링크가 연결되는 것을 특징으로 한다.

제2 실시예

도 1은 본 발명의 제1 실시예에 따른 시계줄의 일부를 링크의 일부가 절취된 상태로 도시하는 평면도이다.

도 2는 핀의 평면도이다.

도 3은 다른 핀의 평면도이다.

도 4는 제2 실시예의 링크의 단면도이다.

도 5는 제3 실시예의 단면도이다.

도 6은 제3 실시예의 핀의 평면도이다.

도 7은 링크와 핀의 연결부를 도시하는 평면도이다.

도 8은 한 쌍의 링크와 핀 사이의 연결부를 도시하는 평면도이다.

도 9는 제1 벽을 도시하는 도면이다.

도 10은 다른 실시예를 도시하는 단면도이다.

도 11은 제4 실시예의 핀의 평면도이다.

도 12 내지 도 14는 시계줄의 평면도이다.

도 15와 도 16은 종래의 시계줄의 단면도이다.

실시예

도면을 참고하여, 본 발명의 실시예를 설명한다.

도 1 내지 도 3에는 본 발명의 제1 실시예에 따른 시계줄이 도시되어 있다. 상기 시계줄에는 링크(10)와 핀(20)이 포함되어 있다. 도 1에 도시한 바와 같이, 상기 링크(10)는 Y자 모양이며, 시계줄의 길이 방향 중 한 방향으로 돌출되는 한 쌍의 외측 연결부(11)와, 상기 링크의 중앙부로부터 상기 방향과 반대 방향으로 돌출되는 중앙 연결부(13)를 포함한다. 상기 중앙 연결부(13)는 인접하는 링크(10)의 외측 연결부(11) 사이에 형성된 홈(recess)에 삽입되고, 인접하는 링크와 링크는 핀(20)에 의해 연결된다.

상기 각 외측 연결부(11)의 내측에는 제1 구멍(14)이 형성되어 있고, 이 제1 구멍(14)보다 큰 직경의 제2 구멍(15)이 상기 제1 구멍의 외측부에 형성되어 있다. 상기 중앙 연결부(13)의 양측에는 제1 구멍(14)과 동일 직경의 한 쌍의 구멍(12)이 형성되어 상기 인접하는 링크의 홈에 삽입되었을 때 상기 제1 구멍(14)과 대향된다.

도 2에 도시된 바와 같이, 상기 핀(20)에는 축(24)과, 이 축(24)보다 큰 직경의 억지 끼워맞춤부(25)와, 상기 축(24)과 억지 끼워맞춤부(25) 사이에 목부(21)가 포함되어 있다. 상기 목부(21)는 억지 끼워맞춤부(25)를 향해 테이퍼진 형태로 되어 있다. 상기 축(24)의 외측 단부에는 경사부(26)가 형성되어 있어, 축을 구멍(12)에 쉽게 삽입할 수 있다. 상기 축(24)의 내측 단부에는 대경부(大徑部)(24c)가 구멍(12)에 삽입될 수 있도록 형성되어 있다. 상기 목부(21)의 테이퍼 단부는 상기 축(24)의 직경보다 작은 직경으로 형성되어 있다. 상기 축(24)은 상기 구멍(12)에 회전 가능하게 삽입될 수 있도록 형성되어 있고, 상기 억지 끼워맞춤부(25)는 상기 구멍(15)에 억지 끼워맞춰지게 형성되어 있다.

상기 핀(20)은 상기 링크(10)보다 경질(硬質)의 재료로 제작하는 것이 좋다.

상기 핀(20)은, 예컨대 도 3에 도시한 규격대로 형성된다. 억지 끼워맞춤부(25)는 그 길이가 2.0 mm, 직경이 1.1 mm이고, 대경부(24c)의 직경은 1.0 mm이며, 상기 축(24)의 직경은 0.8 mm이다. 상기 목부(21)는 좀 더 작은 단부에서 그 직경이 0.7 mm이며, 30°의 각도로 경사져 있다. 상기 목부(21)와 대경부(24c)의 길이는 0.7 mm이다.

인접하는 링크와 링크를 연결하기 위하여, 상기 링크들 중 한 링크의 중앙 연결부(13)를 상기 다른 링크의 외측 연결부(11) 사이의 홈에 삽입하고, 각 핀(20)의 축(24)을 상기 구멍(12, 14)에 삽입하며, 상기 억지 끼워맞춤부(25)를 상기 구멍(15)에 억지 끼워맞춘다. 이 억지 끼워맞춤부(25)는 상기 구멍(15)의 쇼울더(shoulder)에 접하여 멈춰진다. 그러나, 상기 억지 끼워맞춤부(25)를 더 눌러 넣으면, 축방향으로 뚫개진다. 그 결과, 그 억지 끼워맞춤부의 직경이 확장되어, 억지 끼워맞춤부와 구멍(15) 내벽 사이의 접촉 압력이 상당히 증가된다.

상기 축(24)과 억지 끼워맞춤부(25) 사이에 목부(21)가 형성되어 있기 때문에, 상기 제1 구멍(14)의 내벽 일부는 상기 억지 끼워맞춤부(25)가 구멍(14)에 억지 끼워질 때 그 내벽 일부가 변형됨으로써 상기 목부(21)의 홈으로 들어가게 된다. 그 결과, 도 1에 도시한 바와 같이, 단면이 쐐기(wedge) 형태의 쐐기부(17)가 상기 홈에 형성된다. 상기 쐐기부(17)는 핀(20)이 링크로부터 이탈되는 것을 방지해 준다.

도 4에 도시한 링크(10)는 도 1에 도시한 링크(10)와 그 형태가 다르다. 도 1의 링크들은 형태가 동일하지만, 도 4의 인접하는 링크들은 형태가 다르다.

상기 제1 구멍(14)의 직경은 1.0 mm이고, 상기 제2 구멍(15)의 직경은 상기 핀(20)의 억지 끼워맞춤부(25)의 직경과 동일한 1.1 mm이다.

도 5 내지 도 9에는 본 발명의 제3 실시예가 도시되어 있다. 이전의 실시예와 동일한 부분에 대해서는 도 1 내지 도 4의 도면 부호와 동일한 도면 부호로 나타내었고, 그 부분에 대한 상세한 설명은 생략한다.

본 실시예의 시계줄에는 한 쌍의 외측 링크(10a)와, 한 쌍의 내측 링크(18) 및 한 쌍의 핀(20a)이 포함되어 있다. 상기 제1 구멍과 제2 구멍은 상기 외측 링크(10a)에 형성되어 있고, 구멍(12)은 내측 링크(18)에 형성되어 있다.

상기 핀(20a)의 양단부에는 축(24a)이 형성되어 있다. 핀(20a)의 중앙부에는 억지 끼워맞춤부(25a)가 형성되어 있다. 상기 축(24a)과 억지 끼워맞춤부(25a) 사이에는 목부(21a)가 형성되어 있다.

도 6을 참조하면, 상기 축(24a)의 직경은 1.1 mm이고, 억지 끼워맞춤부(25a)의 직경은 1.22 mm이며, 목부(21a)의 직경은 0.7 mm이다.

상기 억지 끼워맞춤부(25a)는 상기 제2 구멍(15)에 억지 끼워맞춰져서, 제2 구멍(15)의 쇼울더부는 도 9에서 파선으로 도시한 것처럼 뚫개진다. 따라서, 도 5에 도시한 것과 같은 쐐기부가 형성되어, 상기 핀(20a)은 제1 실시예에서와 동일한 방식으로 링크(10a)로부터 이탈되는 것이 방지된다.

도 10에는 외측 링크(10a)의 다른 실시예가 도시되어 있다. 이 실시예에서, 상기 제1 구멍(14)의 단부는 원뿔 형태로 형성되어 있다.

도 11에는 본 발명의 제4 실시예가 도시되어 있다. 전술한 실시예에서는 목부(21)가 억지 끼워맞춤부를 향해 테이퍼진 형태로 되어 있지만, 제4 실시예의 목부(21b)는 축(24a)을 향해 테이퍼진 형태로 되어 있다.

전술한 실시예에서는 목부(21)가 맞물림 해제 방향으로 테이퍼진 형태로 되어 있기 때문에, 강한 힘이 링크에 인가되면 핀이 링크로부터 이탈될 수 있다.

제4 실시예에서는, 목부(21b)가 맞물림 해제를 방지하는 방향으로 경사져 있기 때문에, 핀은 이탈되지 않

는다.

도 12 내지 도 14에는 링크의 여러 형태가 도시되어 있다.

신입성이용기용량

본 발명에 따르면, 썬기형 단면이 목부에 형성되므로, 핀이 링크로부터 이탈되는 것이 방지된다. 따라서, 핀에 널링 가공을 할 필요가 없고, 간단한 구조로 된 핀에 의해 링크와 링크를 확실히 연결할 수 있다.

(S7) 청구의 범위

청구항 1

밴드 링크 연결 구조체로서,

링크의 한 측면의 중앙부로부터 상기 밴드 링크 연결 구조체의 길이 방향으로 돌출되는 중앙 연결부와, 링크의 다른 측면으로부터 상기 길이 방향과 반대 방향으로 돌출되는 한 쌍의 외측 연결부가 마련된 링크와;

상기 중앙 연결부에 형성된 한 쌍의 제1 구멍과;

상기 외측 연결부의 내측으로 개방된 상태로 이 외측 연결부 각각에 형성되고, 상기 제1 구멍과 직경이 같은 제2 구멍과;

상기 외측 연결부의 외측으로 개방된 상태로 이 외측 연결부에 형성되고, 상기 제2 구멍과 동축이며 제2 구멍보다 직경이 큰 제3 구멍과;

인접하는 상기 링크와 링크를 연결하는 한 쌍의 핀으로서, 각각의 핀은 상기 제1 구멍과 제2 구멍에 삽입되는 축과, 상기 제2 구멍 및 제3 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 억지 끼워맞춤부 사이에서 상기 제2 구멍과 인접한 부분이 테이퍼 형태로 형성된 목부(neck portion)를 포함하는 한 쌍의 핀

을 포함하며,

상기 축을 상기 제1 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제3 구멍에 억지 끼워맞춤으로써, 상기 인접하는 링크와 링크가 연결되는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 2

제1항에 있어서, 상기 목부는 상기 억지 끼워맞춤부를 향해 테이퍼지는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 3

제1항에 있어서, 상기 목부는 상기 축을 향해 테이퍼지는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 4

장신구 밴드로서,

링크의 한 측면의 중앙부로부터 상기 장신구 밴드의 길이 방향으로 돌출되는 중앙 연결부와, 링크의 다른 측면으로부터 상기 길이 방향과 반대 방향으로 돌출되는 한 쌍의 외측 연결부가 마련된 링크와;

상기 중앙 연결부에 형성된 한 쌍의 제1 구멍과;

상기 외측 연결부의 내측으로 개방된 상태로 이 외측 연결부 각각에 형성되고, 상기 제1 구멍과 직경이 같은 제2 구멍과;

상기 외측 연결부의 외측으로 개방된 상태로 이 외측 연결부에 형성되고, 상기 제2 구멍과 동축이며 제2 구멍보다 직경이 큰 제3 구멍과;

인접하는 상기 링크와 링크를 연결하는 한 쌍의 핀으로서, 각각의 핀은 상기 제1 구멍과 제2 구멍에 삽입되는 축과, 상기 제2 구멍 및 제3 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 억지 끼워맞춤부 사이에서 상기 제2 구멍과 인접한 부분이 테이퍼 형태로 형성된 목부를 포함하는 한 쌍의 핀

을 포함하며,

상기 축을 상기 제1 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제3 구멍에 억지 끼워맞춤으로써, 상기 인접하는 링크와 링크가 연결되는 것을 특징으로 하는 장신구 밴드.

청구항 5

내측 링크와;

상기 내측 링크 양측의 한 쌍의 외측 링크와;

상기 내측 링크를 관통하여 형성된 제1 구멍과;

상기 외측 링크의 내측으로 개방된 상태로 이 외측 링크 각각에 형성되고, 상기 제1 구멍의 직경과 동일

한 직경의 제2 구멍과;

상기 제2 구멍과 동축으로 상기 외측 링크에 형성되고, 상기 제2 구멍보다 작은 직경의 제3 구멍과;

상기 제3 구멍에 삽입되는 축과, 상기 제2 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 억지 끼워맞춤부 사이에서 상기 제3 구멍에 인접한 부분이 테이퍼 형태로 형성된 목부를 포함하며, 상기 내측 링크와 외측 링크를 연결하는 핀

을 포함하며,

상기 축을 상기 제3 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제2 구멍에 억지 끼워맞춤으로써, 상기 내측 링크와 외측 링크가 연결되는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 6

제5항에 있어서, 상기 목부는 상기 축을 향해 테이퍼지는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 7

제5항에 있어서, 상기 목부는 상기 억지 끼워맞춤부를 향해 테이퍼지는 것을 특징으로 하는 밴드 링크 연결 구조체.

청구항 8

내측 링크와;

상기 내측 링크 양측의 한 쌍의 외측 링크와;

상기 내측 링크를 관통하여 형성된 제1 구멍과;

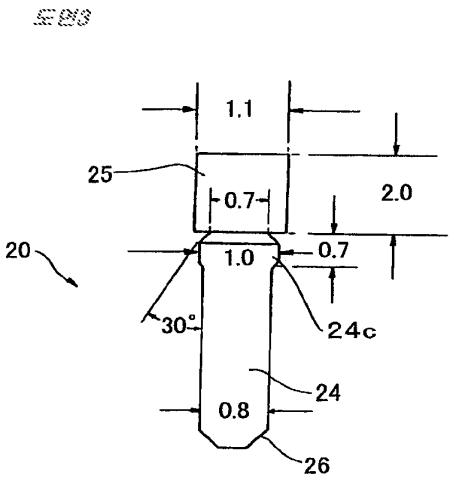
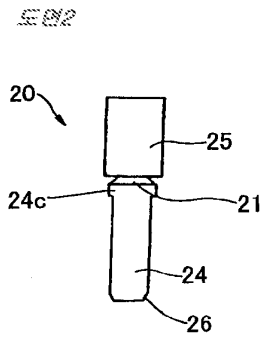
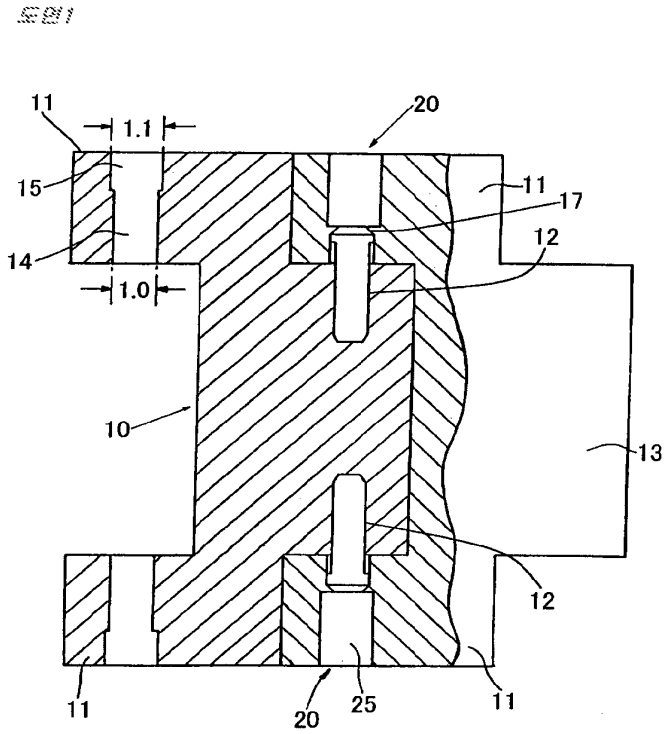
상기 외측 링크의 내측으로 개방된 상태로 이 외측 링크 각각에 형성되고, 상기 제1 구멍의 직경과 동일한 직경의 제2 구멍과;

상기 제2 구멍과 동축으로 상기 외측 링크에 형성되고, 상기 제2 구멍보다 작은 직경의 제3 구멍과;

상기 제3 구멍에 삽입되는 축과, 상기 제2 구멍에 억지 끼워맞춤되고 상기 축의 직경보다 큰 직경의 억지 끼워맞춤부와, 상기 축과 끼워맞춤부 사이에서 상기 제3 구멍과 인접한 부분이 테이퍼 형태로 형성된 목부를 포함하며, 상기 내측 링크와 외측 링크를 연결하는 핀

을 포함하며,

상기 축을 상기 제3 구멍에 삽입하고 상기 억지 끼워맞춤부를 상기 제2 구멍에 억지 끼워맞춤으로써, 상기 내측 링크와 외측 링크가 연결되는 것을 특징으로 하는 장신구 밴드.



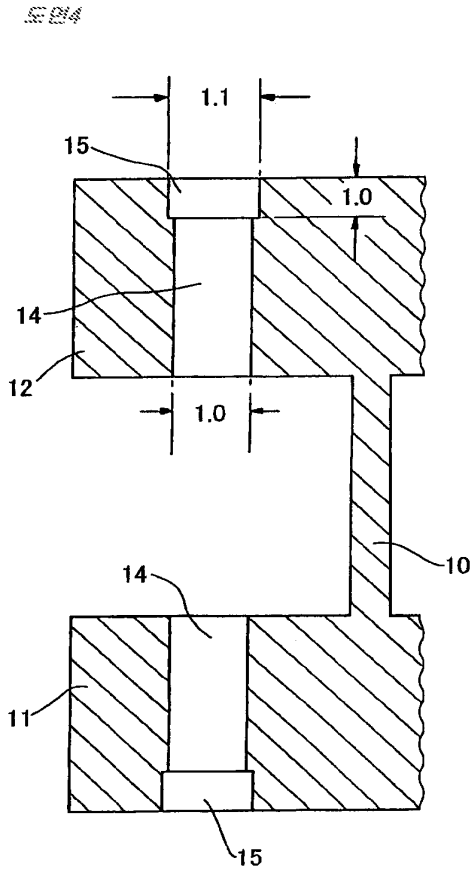


FIG 5

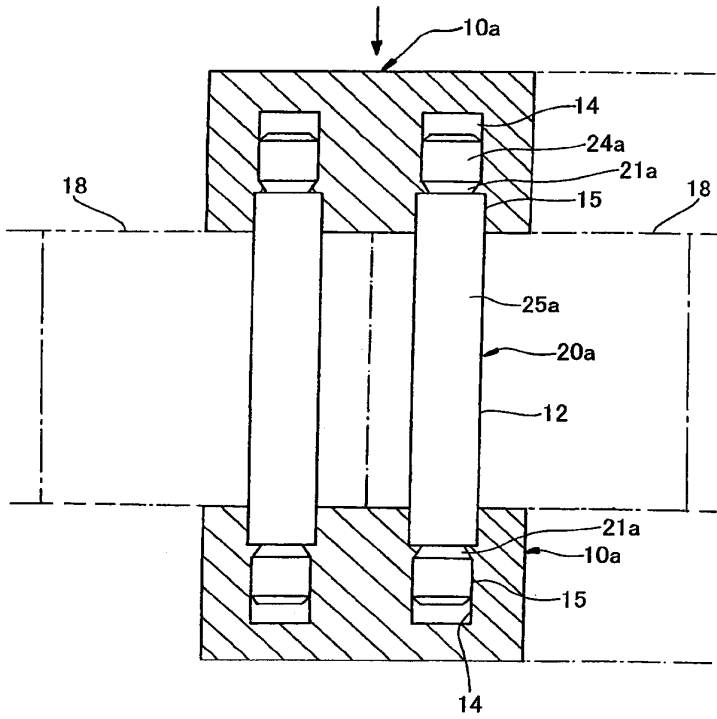


FIG 6

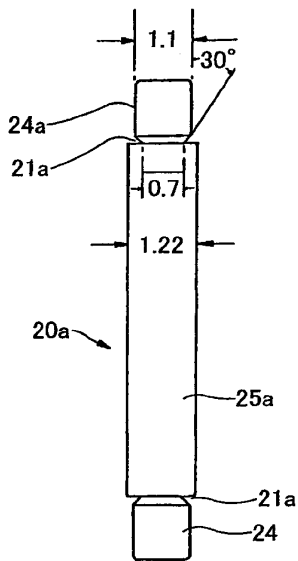


FIG 7

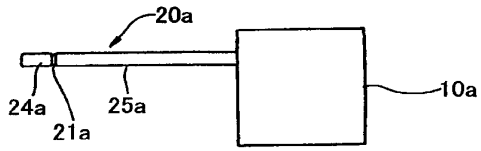


FIG 8

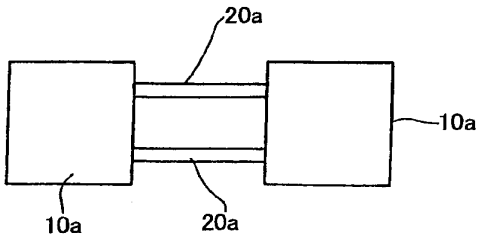


FIG 9

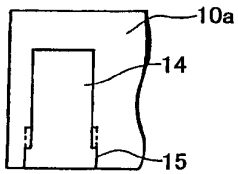


FIG 10

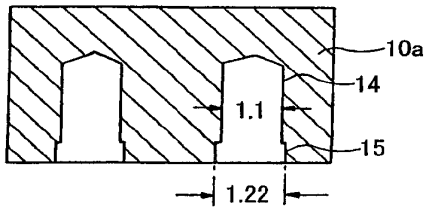


FIG 11

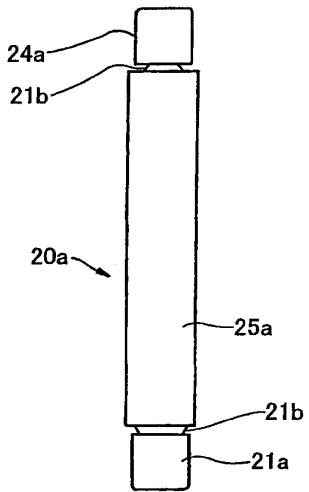


FIG 12

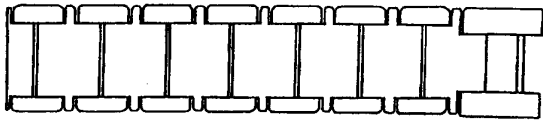


FIG 13

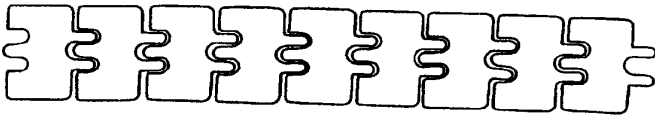


FIG 14

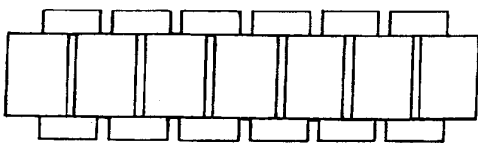


FIG. 5

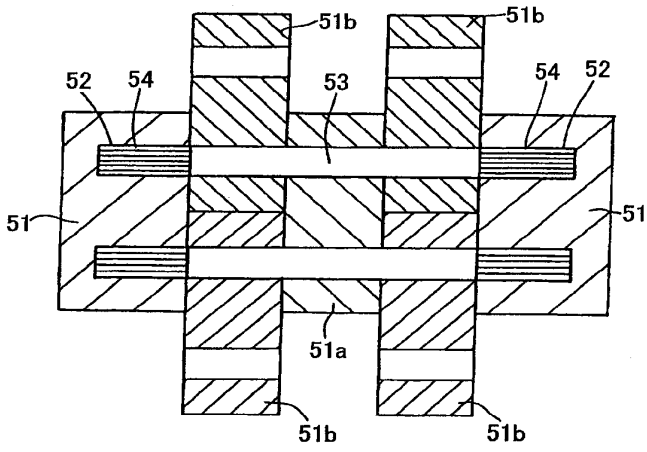
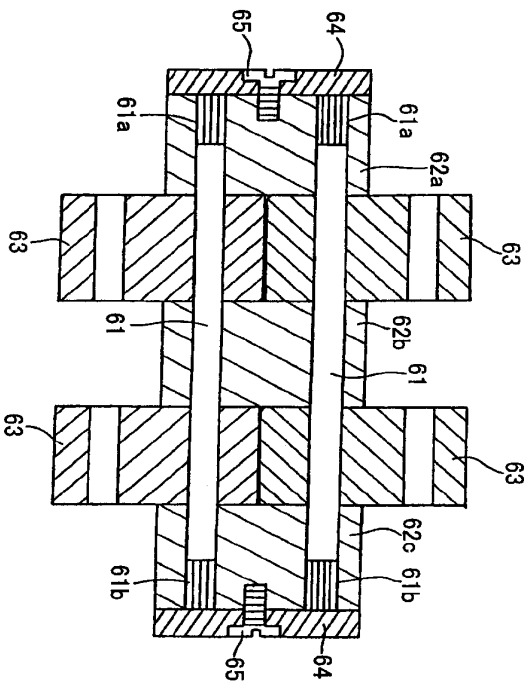


FIG. 6



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심사청구 : 없음

(54) 가요성 코어상의 강제물질로 이루어진 링크를 가진 팔찌

요약

팔찌(1)는 강제 물질로 이루어진 복수의 병치된 링크(2)와 링크가 맞물리는 가요성 코어(3)로 형성된다. 가요성 코어(3)는 차례로 제거가능하게 조립된 가요성 요소(4)의 길이의 부분위로 형성된다. 각 가요성 요소는 두 대향측면상에 제 1 조립부분(7)과 이에 보완적인 제 2 조립부분(6)을 포함한다. 상기 요소들은 가요성 스트립을 형성하기위해 함께 제 1 및 제 2 조립부분을 끼움으로써 차례로 조립될 수 있다. 링크(2)는 이들의 조립된 위치내에 가요성 요소를 고정하기위해 가요성 코어상에 위치된다.

대표도

도 1a

색인어

팔찌, 형상기억

명세서

도면의 간단한 설명

도 1a 및 1b는 평면도 및 본 발명에 따라 조립된 팔찌의 부분의 제 1 실시예의 도 1a의 선 I-I 을 따른 단면도를 도시한다.

도 2a 및 2b는 평면도 및 팔찌의 크기가 조정되는 방법을 설명하는 본 발명에 따른 팔찌의 부분의 제 1 실시예의 도 2a의 선 II-II를 따른 단면도를 도시한다.

도 3a-3c는 본 발명에 따른 팔찌의 링크가 변화하는 크게 만곡된 위치 및 작게 만곡된 위치에서 직사각형 위치내의 팔찌의 부분의 세로 평면도이다.

도 4a 및 4b는 평면도 및 팔찌의 크기가 조정되는 방법을 설명하는 본 발명에 따른 팔찌의 부분의 제 2 실시예의 도 4a의 선 III-III를 따른 단면도를 도시한다.

* 부호설명

- 1: 팔찌 2: 강제물질
- 3: 가요성 코어 4: 가요성 요소
- 4': 제 1 가요성 부분 5: 단부 피스
- 6: 제 1 조립 부분 7: 제 2 조립 부분
- 8: 개구부 9: 블라인드 홀
- 10: 스템

발명의 상세한 설명

발명의 목적

발명이 속하는 기술 및 그 분야의 종래기술

본 발명은 가요성 코어상의 강제 물질로 이루어진 링크를 가진 팔찌에 관한 것이다.

상기 팔찌는 강제물질로 이루어진 몇몇 병치된 링크 형태를 이루며 팔찌가 구부러질수 있도록 가요성 코어로 맞물리게 된다. 상기 팔찌는 예를들어 하나 또는 두 부분을 가진 손목시계 밴드 또는 하나의 부분과 팔찌 부분의 단부중 하나에 각각 배치된 한 부분과 걸쇠 부분을 가지는 종래의 팔찌일 수 있다. 강제 물질로 만들어진 링크는 강제 장식 부분으로 사용되거나 팔찌를 더욱 견고하고 단단하게 하는데도 사용된다. 따라서 사용되는 강제 물질은 피부에 과민반응을 일으키지 않는형태 및 내마모성이 큰 형태로 선택되어야 한다.

분절부분이 형성된 중심코어에 장착되는 강제 링크를 포함하는 팔찌는 종래기술의 몇가지 문헌에서 이미 공지된 바 있다.

유럽특허 제 0 030 705호는 힌지가 형성된 팔찌를 공개하고 있다. 이 팔찌는 각각 두 대향면에 이루어진 두 가로 돌출 부분을 각각 가지는 평행육면체 형상의 강제요소의 체인으로 형성된다. 각 요소의 상기 돌출 부분은 체인을 형성하기 위하여 요소가 타측뒤에 하나가 고정되도록 각면에 다른 경사를 가지는 직립 L자형의 섹션을 가진다. 강제 요소는 강제 요소가 조립되어 유지하도록 프레임형상내에 강제 링크로 덮여진다. 상기 팔찌는 강제 요소의 돌출부분으로 결합된다.

상기 유럽특허 제 0 030 705호에 공지된 힌지형성 팔찌의 한가지 결점은 강제 내부요소로 형성된다는 점이다. 이것은 팔찌가 결합되도록 하기 위해 돌출부분을 가진 요소가 특정한 형태를 가져야 한다. 결과적으로, 요소의 체인을 형성하고 팔찌가 결합될 수 있도록 하기 위해 돌출부분을 가진 비교적 두꺼운 내부 요소로 인해 팔찌의 두께가 매우커지고 커진다.

스위스 특허 제 365 242호는 결합된 요소를 가지는 팔찌를 공개하고 있다. 이러한 팔찌는 둥근 대향 변부를 가진 일련의 차례로 나란히 고정된 강체 플레이트와 일련의 고리가 형성된 플레이트에 결합된 강체 링으로 형성된다. 상기 링은 플레이트가 팔찌가 플레이트의 둥근 변부에서 결합되도록 하는 동안 걸려 유지된다.

상기와 같이 스위스 특허 제 365 242호에 공개된 상기 팔찌의 결점은 결합된 팔찌를 만들기 위해 강체 내부 플레이트의 두께가 커진다는 것이다.

독일 특허 제 1 081 260호는 차례로 조립된 혹은 요소로 형성된 코어에 배치된 링크를 형성하고 관형 요소로 형성된 결합된 팔찌를 공개하고 있다.

상기 팔찌의 길이는 몇몇 후크요소들을 해제시켜 이들을 커버하는 링크를 제거함으로써 조절될 수 있다. 그러나, 차례로 걸려 고정될 수 있도록 하기 위해 강체 요소로 된 후크요소를 위한 부분 또는 핀이 이들을 커버하는 각 링크의 내부쪽의 공간을 마감하도록 각 걸리는 부분에 형성되어야 한다.

심지어 팔찌가 상술한 공지기술에서보다 작은 두께를 가질 수 있을지라도 이들을 고정하기 위해 이들을 커버하는 링크내부에 조립된 각 강체 후크 요소를 마감하기 위한 부분이 추가되어야 한다. 이러한 사실은 상당한 결점으로 작용하는데 팔찌의 길이가 쉽게 조절될 수 없기 때문에 주어진 몇부분이 후크 요소와 결합하여 위치하게 되어야 한다는 것이다. 결합된 요소없이 팔찌가 적절한 가요성을 가지도록 하는 한편 팔찌의 두께를 줄이기 위하여 프랑스 특허 제 2 625 879호는 가요성 코어를 가지는 팔찌를 공개하고 있다. 상기 가요성 코어는 강체물질의 링이 위치하는 스트립의 형태로 이루어진다. 그러나, 가요성 코어를 가지는 팔찌의 한가지 결점은 착용하는 사람의 손목의 팔찌의 크기를 맞추기가 어렵고 크기조정이 하나 또는 몇몇 링이 제거되어야하고 가요성 코어가 다른 단부 피스에 연결되기 때문에 전문상점에 가야한다는 것이다. 가요성 코어를 가진 팔찌의 또 다른 결점은 한번 가요성 코어가 착용하는 사람의 손목에 맞게 커팅되면 다른 사람이 착용할때를 위해 더이상 크기를 확대할 수 없다는 점이다.

발명이 이루고자 하는 기술적 과제

따라서, 본 발명의 목적은 가요성 코어에 강체 물질로 이루어진 링크를 포함하는 얇은 두께의 팔찌를 제공하고 팔찌의 크기라 쉽게 조절될 수 있도록 함으로써 상술한 종래의 결점을 극복하기 위한 것이다.

따라서, 본 발명은 상술한 팔찌에 관한 것으로 가요성 코어가 조립되는 가요성 요소의 길이부분이상으로 형성되어 이들이 각각 제거될 수 있고 각 가요성코어의 길이방향의 가요성 요소가 두 대향측면상에 제 1 조립부분과 이를 보완하는 제 2 조립부분을 포함하여 상기 제 1 및 제 2 조립부분을 끼움으로써 요소가 차례로 조립되도록 하고 가요성 코어상에 위치하는 링크가 끼워진부분을 커버함으로써 조립된 부분내의 가요성 요소를 유지하도록 하는 것을 특징으로 한다.

본 발명에 따른 팔찌의 장점은 하나 또는 몇몇 링크와 마찬가지로 가요성 코어로부터 하나이상의 가요성 요소를 제거 또는 추가함으로써 팔찌의 크기를 쉽게 조절한다는 것이다. 팔찌의 한 단부로부터 시작하여 팔찌의 크기를 줄이기 위해 최종 가요성 요소와 맞물린 단부 피스가 먼저 제거되어야 한다. 그후 최종 링크가 그 자유단부로부터 가요성 코어위로 슬라이딩됨으로써 제거된다.

두 인접 가요성 요소의 조립된 부분을 커버하는 상기 최종 링크를 제거함으로써 상기 최종요소는 이것이 부착되는 요소로부터 제거될 수 있다. 상기 작동은 팔찌의 크기가 사용자의 손목에 맞추어질 때까지 몇몇 링크와 가요성 요소를 제거하기 위해 동시에 또는 연속하여 수행될 수 있다.

각 가요성 요소는 한 측면에 제 1 조립 부분 그리고 대향측면에 이를 보완하는 제 2 조립 부분을 포함하는 것이 바람직하다. 이와같이 상기 요소들은 이들의 보완적인 조립부분과 함께 끼워짐으로써 차례로 조립된다. 한번 가요성 코어의 가요성 요소들이 조립되면 가요성 코어는 그 전체 길이에 걸쳐 균이한 두께의 가요성 스트립을 형성한다. 물론, 팔찌 크기의 조정이 팔찌의 전체 길이에 걸쳐 일어나는 것은 아니기 때문에, 가요성 코어의 오직 한 부분이 동일한 크기의 가요성 요소로 형성될 수 있다. 각 가요성 요소의 제 1 조립 부분이 T자 형상 또는 도브테일 형상을 가지는 한편, 제 2 조립 부분은 제 1 조립 부분에 보완적인 T 형상 또는 도브테일 형상의 구멍을 가지는 것이 바람직하다.

가요성 코어는 그 수피 탄성 특질을 위한 형상 기억 물질로 만들어지는 것이 바람직하다. 상기 형상 기억물질은 티타늄 및 니켈로 형성된 금속 합금 또는 복합 플라스틱 물질일 수 있다. 가요성 코어의 두께는 1mm 이하 예를들어 0.4mm에 근접하나 0.2mm인 것이 바람직하다.

상기 물질로 만들어진 코어는 팔찌에 적절한 가요성이 주어지는 동안 파손없이 견인 또는 비틀림에 저항할 수 있다. 상기 가요성 코어의 수피 탄성 형상 기억 물질로 인해 열처리를 통해 손목의 형태에 맞는 코어형상을 가질 수 있다. 또한, 상기 수피 탄성 물질을 가짐에 따라 탄성은 강철 스프링보다 4배 더 클 수 있다.

강체 물질의 링크는 3mm이하 바람직하게는 2mm정도의 두께를 가지는 세라믹 물질, 서밋(cermit) 또는 강성 금속으로 이루어질 수 있다. 이와같이, 팔찌는 높은수준의 파손저항성 및 안전성을 가지면서 작은 두께로 이루어질 수 있다. 팔찌는 다양한 부분으로 형성되기 때문에, 만들기가 쉽고 크기가 쉽게 조절되며 제조비용이 감소한다.

가요성 코어상의 강체 링크를 가진 팔찌의 목적, 장점 및 특성은 도면을 참조하여 본 발명의 비제한적인 실시예로 하기에 더욱 상세히 설명된다.

발명의 구성 및 작용

도 1a 및 1b는 조립된 위치에서 팔찌(1)의 한 분기 부분을 간단한 방법으로 도시한다. 팔찌(1)는 강체물질(2)로 이루어진 몇개의 링크로 맞물리는 가요성 코어(3)와 가요성 코어의 한 단부에 고정되는 단부 피스(3)를 포함한다. 단부 피스(5)는 도시된 바와 같이 결쇠의 부분 또는 도시되지 않은 시계 케이스의 연결부분일 수 있다.

도시되지 않은 가요성 코어의 다른 단부는 종래의 방법으로 시계 케이스에 고정되거나 단부 피스(5)에 보완부분과같이 작용하는 다른 단부피스에 고정될 수 있다. 가요성 코어(3)는 제 1 가요성 부분(4')과 가요성 스트립을 형성하도록 가요성 부분으로부터 차례로 조립되는 몇몇 가요성 요소(4)로 형성될 수 있다.

가요성 요소(4)는 이들을 커버하는 링크(2)의 작용에 따라 동일하거나 다른 크기를 가진다. 각 가요성 요소(4)는 팔찌의 길이방향에서보아 제 1 조립 부분(6)을 가진 제 1 측면과 제 1 조립부분에 보완적인 제 2 조립부분(7)을 가진 제 2 측면을 포함한다. 이와같이 가요성 요소(4)는 상응하는 조립부분과함께 끼워짐으로써 서로 제거가능한 방법으로 조립될 수 있다. 상기 조립 부분들은 보완적인 부분들이 차례로 끼워질 때 마찰에 의해 일시적으로 접촉하는 부분을 고정하도록 형성될 수 있다.

따라서, 제 1 가요성 부분은 역시 한단부에서 가요성 요소(4)가 스트립을 형성하기위해 조립되는 조립 부분을 가져야 한다. 가요성 요소를 조립하는 상기 방법으로 상기 스트립은 가요성 코어(3)의 길이 전체에 걸쳐 균일한 두께를 가지는 것이 바람직하다. 상기 가요성 코어의 두께는 1mm이하 바람직하게는 0.2mm정도이다.

각 가요성 요소(4)의 제 1 조립 부분(7)은 T자형상으로 이루어질 수 있는 반면, 제 2 조립 부분(6)은 여기에 보완적인 T자형상의 개구부이다. 가요성 요소(4)의 제 1 조립부분(7)은 따라서 인접 가요성 요소의 제 2 조립 부분(6)으로 끼워질 수 있다. 몇몇 다른 요소들과 함께 상기 작동을 반복함에 따라 가요성 코어를 형성하는 가요성 스트립이 달성된다.

물론, 조립부분은 다른 형상 특히 각 가요성 요소의 중심 부분에 헤드가 연결된 암과 하나이상의 헤드를 포함하는 조립 부분중 하나로 이루어질 수 있다. 헤드의 폭은 물론 세로로 각 조립된 요소를 고정하기 위해 암의 폭보다 크다.

상기 헤드는 각 요소의 중심부분에 이를 연결하는 암의 폭보다 큰 직경의 원부분을 나타낼 수 있다. 다른 조립 부분은 따라서 가요성 요소내의 보완적인 원형 개구부이어야 한다.

가요성 코어를 만드는데 사용되는 물질은 금속과같은 탄성물질이나 형상 기억물질과 같은 수피 탄성 유리가 될 수 있다. 상기 형상 기억물질은 티타늄 및 니켈로 이루어진 금속 합금 또는 복합 플라스틱 물질일 수 있다. 상기 물질은 쉽게 구부러질 수 있도록 필요한 가요성을 가지는 팔찌를 제공하는 한편 알레르기를 일으키지 않고 생물학적 적합성이 있어야 한다. 따라서, 상기 물질의 시트 또는 몇몇 플레이트를 스탬핑함으로써 특히 몇몇 가요성 요소를 제조하기 쉽다. 조립된 위치로 가요성 요소(4)를 유지하기 위해 이들은 실질적으로 평행 육면체의 일반형상을 가지는 강체 물질로 이루어진 링크(2)에 의해 덮여진다. 상기 링크(2)는 이것이 가요성 코어위로 슬라이드되고 맞물려지도록 충분한 크기의 세로 개구부(12)를 가진 링을 형성한다. 상기 세로 개구부(12)는 팔찌가 구부러질때, 가요성 요소의 수직 진행을 허용하도록 약간 만곡된 표면을 가진다.

또한, 상기 링크의 하부는 가요성 코어를 구부림으로써 팔찌를 구부릴 수 있도록 잘린 피라미드 형상을 가진다. 세라믹 물질, 서밋, 강성금속 또는 나무로 이루어지며 3mm이하 바람직하게는 2mm 두께를 가진다.

링크(2)는 한번 가요성 요소가 조립되거나 점차적으로 요소들이 연속하여 조립됨에 따라 상기 코어의 제 1 단부로부터 가요성 코어의 다른 단부로 연속하여 가요성 코어로 맞물릴 수 있다. 각 링크의 세로 개구부(12)의 폭은 각 가요성 요소의 최대폭보다 약간 크고 이들의 높이는 각 가요성 요소(4)의 두께의 두배보다 작다. 상기 개구부의 최소높이는 각 가요성 요소(4)의 두께보다 약간 큰 것이 바람직하다. 이와같이 상기 링크는 가요성 코어위로 쉽게 슬라이드될 수 있다.

한번 링크(20가 가요성 코어(3)의 각 단부사이에서 가요성 코어(3)상에 장착되면, 조립된 요소의 조립부분의 각 영역은 링크 중 하나에 의해 완전히 덮여지도록 위치한다. 결과적으로, 이것은 가요성 코어의 가요성 요소진부가 조립된 위치로 유지되도록 할 수 있다. 한번 상기 단부 피스(50가 최종요소(4) 또는 제 1 가요성 부분(4')의 최종 조립부분에 고정되면 링크(2)는 가요성 코어(3)에 단부 피스(5)에 의해 위치될 수 있다.

도 1a 및 1b의 제 1 실시예에 따라 단부 피스(50를 고정하기 위해, 각 요소(4) 및 제 1 부분(4')의 제 1 조립 부분(7)은 하나 또는 두 개구부(8)를 포함한다. 단부피스(5)는 팔찌의 길이에 수직인 방향으로 배치되는 하나 또는 두 블라인드 홀(9)을 포함한다. 하나 또는 두 스템(10)은 최종 가요성 요소(40 또는 제 1 가요성 부분(4')의 개구부 또는 개구부들(8)을 통과하는 각 블라인드홀(9)내에 장착된다.

블라인드 홀(9)은 나사산이 형성될 수 있고 두 스템(10)은 홀(9)중 하나에 각각 나사결합되는 스크류일 수 있다. 물론, 단부 피스의 고정 스크류는 이들을 감추기 위해 팔찌를 끼는 사람의 손목과 접촉하는 팔찌의 측면에 위치된다.

팔찌의 제 1 실시예와 관련된 도 2a 및 2b는 팔찌(1)의 크기가 어떻게 조절되는 가를 설명한다. 모든 팔찌의 동일한 요소는 도 1a 및 1b와 동일한 참조번호를 사용한다. 따라서 상기 요소들의 설명을 반복하지 않는다.

팔찌의 크기의 조절에 대한 설명을 간단히 하기 위해, 한 가요성 요소(4)와 산 상응하는 링크(2)의 추가 및 삭제만을 설명한다. 물론 균등한 몇몇 요소와 링크의 제거 또는 추가는 동일한 방법으로 이루어진다.

팔찌의 크기를 확대하기 위해, 최종 가요성 요소(4)의 제 1 조립부분(7)의 단부 피스(5)가 먼저 제거된다. 그후, 단계 a1에서, 부가적인 가요성 요소(4)의 제 2 조립부분이 가요성 코어(3)의 최종 요소의 제 1 조립부분(7)에 끼워진다.

상기 새로운 가요성 요소(4)가 조립된 후 새로운 링크(2)는 단계 a2에서 팔찌(1)의 최종 선행링크와 접촉할때까지 코어에 맞물린다. 한번 새로운 링크(2)가 가요성 코어상에 위치하면 부가적인 요소의 제 1 조립부분은 단계 a3에서 단부피스가 맞물리게 하기 위하여 노출되어 남아있게된다. 단부 피스(5)가 부가적인 요소(4)의 제 1 조립부분상의 가요성 코어의 단부에 위치하자마자 고정 스크류(100가 단계 a4에서 두 개구부(8)를 통과하는 나사산이 형성된 홀(9)에 나사결합된다. 따라서, 팔찌의 크기는 한 부가적인 요소와 링크로 조절된다.

팔찌의 크기를 줄이기 위하여, 고정 스크류(10)는 먼저 풀려지고 단계 b1에서 블라인드 홀(9)에서 제거된다. 그후 단부피스(5)가 단계 b2에서 가요성 코어로부터 제거된다. 그후 최종 링크(2)는 단계 b3에서 가요성 코어로부터 이를 제거하기 위해 슬라이드되어야 한다. 결국, 최종 가요성 요소(4)는 단계 b4에서 인접요소의 제 1 조립 부분(7)으로부터 제 2 조립부분(6)을 해제함으로써 제거될 수 있다.

한번 한 요소와 한 링크가 팔찌로부터 제거되면, 단부 피스(5)는 가요성 코어의 최종 요소의 제 1 조립 부분에 고정된다.

상술한 다양한 단계로부터 상기 목적을 위해 특성화된 상점에 갈 필요없이 상기 팔찌를 착용한 사람의 손목에 팔찌의 크기를 쉽게 조절할 수 있게된다는 것을 이해할 수 있다.

강체물질로 이루어진 몇몇 링크와 가요성 코어로 형성된 팔찌의 가요성을 설명하기 위해 직사각형 위치, 약간 구부러진 위치 및 팔찌의 최대 구부러진 위치가 될 수 있는 구부러진 위치에서 팔찌의 부분을 도시하는 도 3a-3c를 참조한다. 상술한 바와 같이, 동일한 요소는 동일한 참조번호로 나타난다.

도 3a-3c에 도시된 링크의 형상은 특히 상부부분에서 도 1a 및 1b에 도시된것과 약간 다르다. 각 링크는 제 2 대향 면상의 제 2 둥근 오목부분(23)과 제 1 면상의 상부부분내의 제 1 둥근 볼록 부분(22)을 가진다는 것을 주목해야 한다. 따라서, 가요성 코어(3)상의 병치된 링크(2)에 의해 한 링크의 제 1 볼록 부분(22)은 인접 링크의 제 2 오목 부분내부로 오게된다.

도 3a 및 3b에 도시된 팔찌(1)를 구부림으로써 세로 개구부(12)로 수직으로 움직일 수 있는 가요성 코어의 가요성 요소(4)의 굴곡이 나타난다. 관절 핀을 사용하지 않고 가요성 코(3)로 인해 도 3c에 도시된 최대위치로 상기 팔찌를 쉽게 구부릴 수 있다.

팔찌의 제 2 실시예에 관한 도 4a 및 4b는 팔찌(1)의 크기를 줄이는 방법을 설명한다. 모든 팔찌의 동일한 요소는 상술한 것과 다른 조립부분을 제외하고 도 1a 및 1b와 동일한 참조번호를 사용한다. 따라서 상기 요소들의 설명을 반복하지 않는다.

팔찌의 크기의 조절에 대한 설명을 간단히 하기 위해, 도 2a 및 2b의 제 1 실시예에 관한 한 가요성 요소(4)와 산 상응하는 링크(2)의 추가 및 삭제만을 설명한다. 물론 균등한 몇몇 요소와 링크의 제거 또는 추가는 동일한 방법으로 이루어진다.

제 1 조립부분(27)은 상기와 같은 도브테일 또는 사다리꼴 형상이며 제 2 조립부분(26)은 제 1 부분에 보완적인 도브테일 또는 사다리꼴 형성의 개구부이다. 개구부(28)는 역시 굽은 팔찌의 복귀력을 조절할 수 있기 위해 특정 요소의 중심부분내에 만들어진다. 그러나, 가요성 코어의 일반적 두께가 이미 크게 감소했기 때문에 단점이 될 수 있는 각 가요성 요소의 두께의 감소를 보일 수 있다.

상기 제 2 실시예에서, 단부 피스(5)가 제 1 부분(5a)와 제 2 부분(5b)에 고정되고 각각 제 1 부분(5a)의 상응하는 나사산(18)으로 나사결합된다.

한편 제 2 부분(5b)이 제 1 부분(5a)에 고정되면, 단부 피스(5)는 가요성 요소의 제 1 조립부분(27)에 보완적인 형상의 요홈(25)을 포함한다. 결과적으로 단부 피스의 요홈(25)내에 제 1 조립 부분(27)이 수용되기 때문에 가요성 코어의 제 1 가요성 부분(4')내와 각 요소내에 고정구멍이 형성될 필요가 없다.

팔찌의 크기를 확대하기 위해, 최종 가요성 요소(4)의 제 1 조립부분(27)의 단부 피스(5)가 먼저 제거된다. 그후, 단계 a1에서, 부가적인 가요성 요소(4)의 제 2 조립부분(26)이 가요성 코어(3)의 최종 요소의 제 1 조립부분(27)에 끼워진다.

상기 새로운 가요성 요소(4)가 조립된 후 새로운 링크(2)는 단계 a2에서 팔찌(1)의 최종 선행링크와 접촉할때까지 코어에 맞물린다. 한편 새로운 링크(2)가 가요성 코어상에 위치하면 부가적인 요소의 제 1 조립부분(27)은 단계 a3에서 단부피스의 제 1 부분(5a)의 요홈(25)내에 이를 수용할 수 있게 하기 위하여 노출되어 남아있게된다. 단부 피스(5)의 제 1 부분(5a)이 부가적인 요소(4)의 제 1 조립부분상의 가요성 코어의 단부에 위치하자마자 제 2부분(5b)이 단계 a4에서 제 1부분(5a)에 대해 적용되고 마지막으로, 고정 스크류(20)가 단계 a5에서, 나사산이 형성된 홀(9)에 나사결합된다. 따라서, 팔찌의 크기는 한 부가적인 요소와 링크로 조절된다.

팔찌의 크기를 줄이기 위하여, 고정 스크류(20)는 먼저 풀려지고 단계 b1에서 블라인드 홀(9)에서 제거된다. 그후 단부 피스(5)의 제 2부분(5b)이 단계 b2에서 가요성 코어로부터 제거된다. 그후 단계 b3에서 단부 피스의 제 1부분(5a)은 최종 요소(4)의 제 1 조립부분으로부터 제거된다. 최종 링크(2)는 단계 b4에서 가요성 코어로부터 슬라이드되어 제거된다. 마지막으로, 최종 가요성 요소(4)는 단계 b5에서 인접요소의 제 1 조립 부분(27)으로부터 제 2 조립부분(26)을 해제함으로써 제거될 수 있다.

한편 한 요소와 한 링크가 팔찌로부터 제거되면, 단부 피스(5)는 가요성 코어의 최종 요소의 제 1 조립 부분에 고정된다.

단부 피스(5)는 제 2 부분(5b)에 도시되지 않은 힌지를 사용하여 힌지결합된 제 1 부분(5a)과 제 1 부분(5a)에 제 2 부분(5b)를 고정하는 다른 수단을 가질 수 있다는 것을 주목하여야 한다.

발명의 효과

상술한 바로부터, 당업자는 청구범위로 한정된 본 발명의 범위를 벗어나지 않고 팔찌의 다양한 변형예를 구성할 수 있다. 각 링크는 C자형태로 구부러진 C자 형상으로 이루어질 수 있어서 링크가 가요성 코어위로 슬라이드되고 요소가 조립되어 유지될 수 있도록 한다. 친공된 부분들이 팔찌의 가로 가요성을 증가하기 위해 가요성 요소의 측면에 형성될 수 있다. 단부 피스는 상술한 제 1 조립부분에 고정되는 특성을 가질 수 있거나 요소의 제 2 조립부분에 고정되는 특성을 가질 수 있다.

마지막으로, 숨겨지는 조립된 요소의 멈춤수단에 대해 각링크가 인접하도록 위치시키기 위하여 가요성 요소의 측면과 각 링크의 개구부내에 멈춤수단이 형성될 수 있다.

(57) 청구의 범위

청구항 1.

링크가 맞물리는 가요성 코어와 강제 물질로 이루어진 복수의 병치된 링크(2)로 형성된 팔찌(1)에 있어서,

차레로 제거가능하게 조립된 가요성 요소(4)의 길이의 한부분위로 형성되고, 각 가요성 코어(3)의 길이방향의 가요성 요소(4)가 두 대향 측면상에 제 1 조립부분(7, 27)과 제 1 조립부분에 보완적인 제 2 조립부분(6, 26)을 포함하여 상기 제 1 및 제 2 조립부분을 끼움으로써 상기 요소를 차레로 조립하도록 하고 링크가 함께 끼워진 부분을 커버함으로써 조립된 위치 내의 가요성 요소를 고정하기 위해 가요성 코어상에 위치하는 것을 특징으로 하는 팔찌.

청구항 2.

제 1항에 있어서, 차레로 조립된 요소(4)를 가진 상기 가요성 코어(3)가 코어의길이 전체에 걸쳐 균일한 두께의 가요성 스트립들을 서로 형성하는 것을 특징으로 하는 팔찌.

청구항 3.

제 2항에 있어서, 가요성 요소의 조립 부분(7, 27)중하나가 T자 형상 또는 도브테일 또는 사다리꼴로 이루어져 서로 인접한 가요성 요소의 보완적 조립부분(6, 26)중 하나에 끼워질 수 있도록 하는 것을 특징으로 하는 팔찌.

청구항 4.

제 1항 내지 3항에 있어서, 강제 물질로 이루어진 링크가 가요성 요소(4)의 폭과 균드한 두께의 세로 개구부(120)를 가진 관형상이고 그 높이는 가요성 요소의 두께의 두배보다 작으며, 링크가 가요성코어(3)상에 위치하여 두 인접 가요성 요소의 서로 끼워진 부분(6, 7;26,27)이 조립된 위치내에 상기 요소들을 고정하기위해 링크중 하나로 완전히 덮이는 것을 특징으로 하는 팔찌.

청구항 5.

전항중 어느 한 항에 있어서, 스트립형태의 가요성 코어(3)가 1mm 이하 바람직하게는 0.2mm범위의 폭을 가지는 형상 기억 물질과 같은 탄성 또는 수퍼 탄성 물질로 형성되는 것을 특징으로 하는 팔찌.

청구항 6.

제 5항에 있어서, 상기 형상 기억 물질이 티타늄 및 니켈로 형성된 금속 합금 또는 복합 플라스틱 물질인 것을 특징으로 하는 팔찌.

청구항 7.

제 5항에 있어서, 상기 탄성 물질이 금속성 유리 물질인 것을 특징으로 하는 팔찌.

청구항 8.

전향중 어느 한 향에 있어서, 상기 링크(20)가 세라믹 물질, 서멧 또는 강성 금속으로 이루어지고 링크의 두께가 3mm이하, 바람직하게는 2mm 범위인 것을 특징으로 하는 팔찌.

청구항 9.

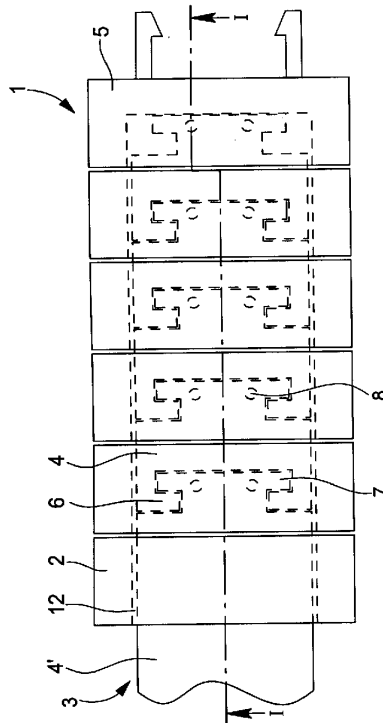
제 1항에 있어서, 조립부분(7, 27)중 하나이상을 통해 가요성 요소(4)가 코어의 한 단부에서 최종 가요성 요소의 개구부를 통해 최종링크에 상응하는 단부 피스(5)의 고정 스템(9)의 통과를 허용하도록 하나 이상의 개구부(8)를 포함하고, 상기 단부 피스가 가요성 코어상의 팔찌 링크를 위치설정하는 최종 가요성 요소에 고정되는 것을 특징으로 하는 팔찌.

청구항 10.

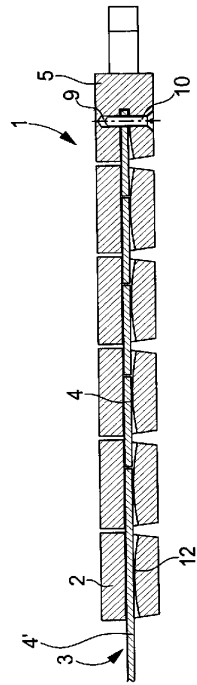
제 1항에 있어서, 팔찌의 단부중 하나의 최종 링크에 상응하는 한 단부 피스(5)가 최종 가요성 요소(4)의 자유 조립 부분(7, 27)중 하나에 고정되고 상기 자유 조립부분이 단부 피스의 보완적인 형상의 요홈(25)내에 고정되는 것을 특징으로 하는 팔찌.

도면

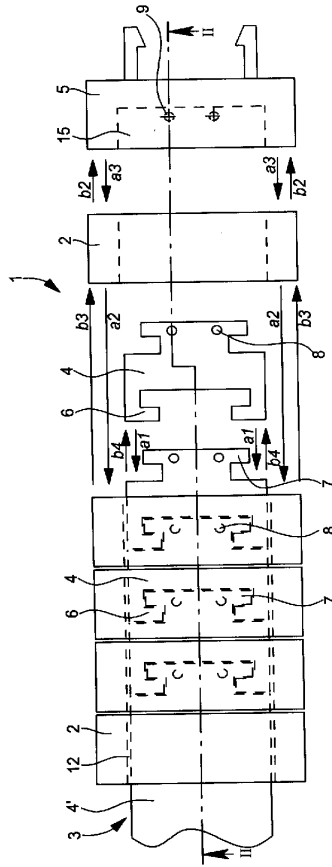
도면 1a



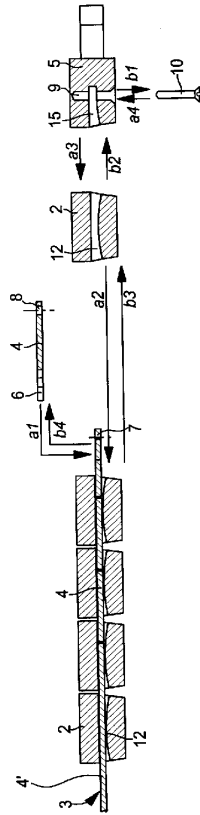
도면 15



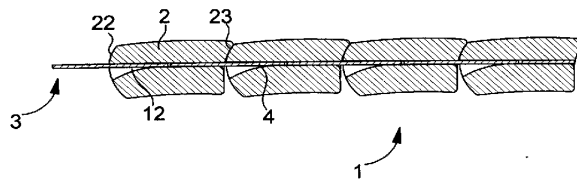
도면 2a



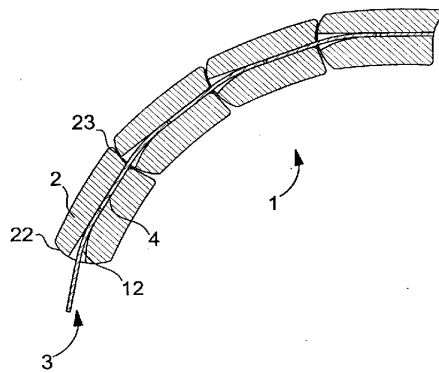
도면25



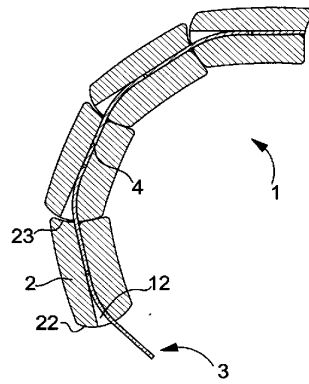
도면3a



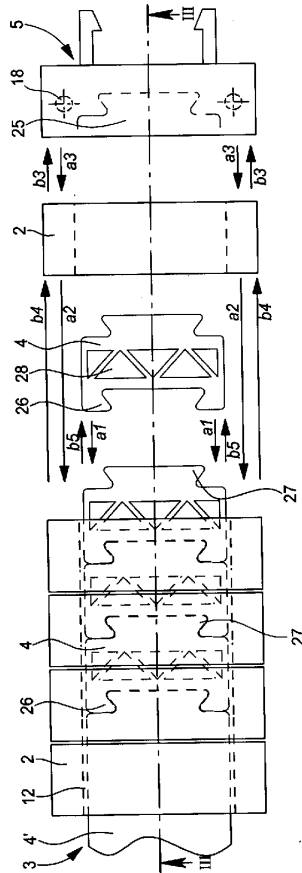
도면3b



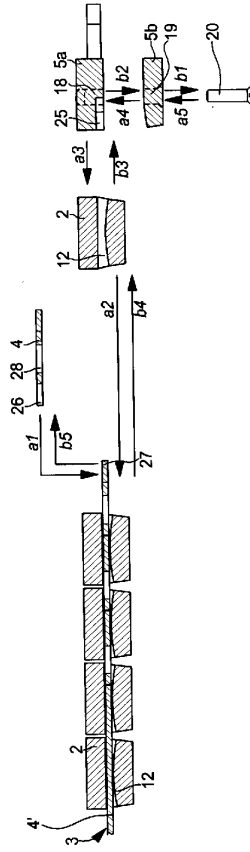
도면 3c



도면 4a

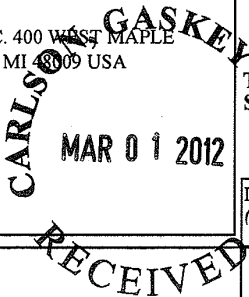


도면 5



PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY


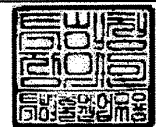
To: SIRAGUSA JOHN M. ✓ CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD, SUITE 350 BIRMINGHAM MI 35209 USA		<h1>PCT</h1> <p>NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION (PCT Rule 44.1)</p>
		Date of mailing (day/month/year) 23 FEBRUARY 2012 (23.02.2012)
Applicant's or agent's file reference 67467-001PCT	FOR FURTHER ACTION See paragraphs 1 and 4 below	
International application No. PCT/US2011/041553 ✓	International filing date (day/month/year) 23 JUNE 2011 (23.06.2011) ✓	
Applicant NG, CHEONG CHOON		

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
Filing of amendments and statement under Article 19:
 The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
 When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
 Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70
 For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 . 9.011.

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. With regard to any protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
 the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
 no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders
 The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.
 Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).
 Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
 In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19months.
 For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the PCT Applicant's Guide, National Chapters.

Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 189 Cheongsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer COMMISSIONER Telephone No. 82-42-481-8755	
---	--	---

* Attention

Copies of the documents cited in the international search report can be searched in the following Korean Intellectual Property Office English website for three months from the date of mailing of the international search report.

<http://www.kipo.go.kr/en/> => PCT Services => PCT Services

ID : PCT international application number

PW : **NMFD6U3V**

Inquiries related to PCT International Search Report or Written Opinion prepared by KIPO as an International Searching Authority can be answered not only by KIPO but also through IPKC (Intellectual Property Korea Center), located in Vienna, VA, which functions as a PCT Help Desk for PCT applicants.

Homepage: <http://www.ipkcenter.com>

Email: ipkc@ipkcenter.com

Phone: +1 703 388 1066

Fax: +1 703 388 1084

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 67467-001PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2011/041553	International filing date (<i>day/month/year</i>) 23 JUNE 2011 (23.06.2011)	(Earliest) Priority Date (<i>day/month/year</i>) 05 NOVEMBER 2010 (05.11.2010)
Applicant NG, CHEONG CHOON		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

the international application in the language in which it was filed

a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (See Box No. II)

3. **Unity of invention is lacking** (See Box No. III)

4. With regard to the title,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the abstract,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 1

as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figure is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/041553

A. CLASSIFICATION OF SUBJECT MATTER		
<i>A44C 5/02(2006.01)i, A44C 5/00(2006.01)i, A44C 25/00(2006.01)i, A44C 27/00(2006.01)i</i>		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) A44C 5/02; A44C 5/10; A44C 25/00; A44C 5/00; A44C 27/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean utility models and applications for utility models Japanese utility models and applications for utility models		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKOMPASS(KIPO internal) & Keywords: a brunnian link assembly, a closed loop, a chain, a pin bar, a link orientation, a elastic band, a top flared portion, a mating structure, a linked wearable articles, a chain		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2003-520083 A (D'ORICA S.R.L.) 02 July 2003 See abstract, claims 1-10, figures 1-4	1-18
A	US 6880364 B1 (MICHAEL F. VIDOLIN et al.) 19 April 2005 See abstract, claims 1-16, figures 1-3	1-18
A	KR 10-2001-0012609 A (CITIZEN HOLDINGS CO., LTD) 15 February 2001 See abstract, claims 1-8, figures 1,5,	1-18
A	KR 10-2006-0042108 A (MONTRES RADO S.A.) 12 May 2006 See abstract, claims, figures 1b,2b	1-18
A	JP 2004-520910 A (LOUIS VUITTON MALLETIER) 15 July 2004 See abstract, claims 1-13, figure 1	1-18
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 22 FEBRUARY 2012 (22.02.2012)		Date of mailing of the international search report 23 FEBRUARY 2012 (23.02.2012)
Name and mailing address of the ISA/KR  Korean Intellectual Property Office Government Complex-Daejeon, 189 Cheongsra-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140		Authorized officer PARK, Se Young Telephone No. 82-42-481-8653 

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2011/041553

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2003-520083 A	02.07.2003	AT 254413 T AU 2000-31857 A1 DE 60006657 D1 EP 1168939 A1 EP 1168939 B1 IT V120000014A1 IT 1315172 B1 JP 2003-520083 T TR200102640T1 WO 01-52683 A1	15.12.2003 31.07.2001 24.12.2003 09.01.2002 19.11.2003 19.07.2001 03.02.2003 02.07.2003 22.04.2002 26.07.2001
US 6880364 B1	19.04.2005	None	
KR 10-2001-0012609 A	15.02.2001	CN 1258204 A0 EP 1018308 A1 EP 1018308 A4 JP 11-262403 A TW 425272 A WO 99-47016 A1	28.06.2000 12.07.2000 13.06.2001 28.09.1999 11.03.2001 23.09.1999
KR 10-2006-0042108 A	12.05.2006	EP 1566110 A1 EP 1566111 A2 EP 1566111 A3 JP 04-571874 B2 JP 2005-230556 A JP 4571874 B2 US 2005-0183412 A1 US 7021041 B2	24.08.2005 24.08.2005 13.06.2007 20.08.2010 02.09.2005 27.10.2010 25.08.2005 04.04.2006
JP 2004-520910 A	15.07.2004	AT 332092 T DE 60213013 D1 EP 1367917 A1 EP 1584255 A1 EP 1584255 B1 FR 2821724 A1 FR 2821724 B1 HK 1074980 A1 JP 2004-520910 T US 2004-0079109 A1 US 7055343 B2 WO 02-071885 A1	15.07.2006 17.08.2006 10.12.2003 12.10.2005 05.07.2006 13.09.2002 13.06.2003 25.08.2006 15.07.2004 29.04.2004 06.06.2006 19.09.2002

Form PCT/ISA/210 (patent family annex) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

SIRAGUSA JOHN M.

CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE
ROAD, SUITE 350 BIRMINGHAM MI 48009 USA

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **23 FEBRUARY 2012 (23.02.2012)**

Applicant's or agent's file reference
67467-001PCT

FOR FURTHER ACTION
See paragraph 2 below

International application No.

PCT/US2011/041553

International filing date (day/month/year)

23 JUNE 2011 (23.06.2011)

Priority date(day/month/year)

05 NOVEMBER 2010 (05.11.2010)

International Patent Classification (IPC) or both national classification and IPC

A44C 5/02(2006.01)i, A44C 5/00(2006.01)i, A44C 25/00(2006.01)i, A44C 27/00(2006.01)i

Applicant

NG, CHEONG CHOON

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
Government Complex-Daejeon, 189
Cheongsu-ro, Seo-gu, Daejeon 302-
701, Republic of Korea
Facsimile No. 82-42-472-7140



Date of completion of this opinion

22 FEBRUARY 2012 (22.02.2012)

Authorized officer

PARK, Se Young

Telephone No.82-42-481-8653



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2011/041553

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :

- the international application in the language in which it was filed
- a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

a. a sequence listing filed or furnished

- on paper
- in electronic form

b. time of filing or furnishing

- contained in the international application as filed.
- filed together with the international application in electronic form.
- furnished subsequently to this Authority for the purposes of search.

4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2011/041553

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO
Industrial applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

Reference is made to the following documents:

- D1: JP 2003-520083 A (D'ORICA S.R.L) 02 July 2003
- D2: US 6880364 B1 (MICHAEL F. VIDOLIN et al.) 19 April 2005
- D3: KR 10-2001-0012609 A (CITIZEN HOLDINGS CO.,LTD) 15 February 2001
- D4: KR 10-2006-0042108 A (MONTRES RADO S.A.) 12 May 2006
- D5: JP 2004-520910 A (LOUIS VUITTON MALLETIER) 15 July 2004

Reasoned statement with regard to novelty, inventive step and industrial applicability :

1. Novelty and Inventive Step

1-1. Claims 1 and 12

The subject matter of claim 1 differ from these prior art documents in that a kit for creating an item consisting of a series of links, the device comprising a base and at least one pin bar including a plurality of pins each including a top flared portion for holding a link in a desired orientation and an opening on a front side of each of the plurality of pins. And it is not obvious to a skilled person in the art by the documents, take alone or in combination.

The subject matter of claim 12 differ from these prior art documents in that a method of creating a linked item comprising the steps of supporting at least one pin bar to a base, assembling at least two elastic bands across adjacent pins, capturing one end of an elastic band and pulling the end over until a desired link length and configuration. And it is not obvious to a skilled person in the art by the documents, take alone or in combination.

Therefore, claims 1 and 12 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1-2. Claims 2-11 and 13-18

Dependent claims 2-11 and 13-18 also meet the requirements of PCT Article 33(2) and (3).

Continued on Supplemental Box

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2011/041553

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V

2. Industrial Applicability

Claims 1-18 are industrially applicable under PCT Article 33(4).

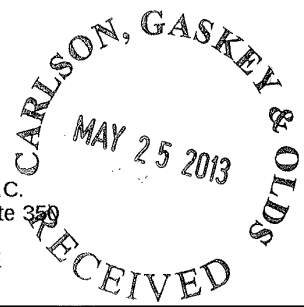
PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING
TRANSMITTAL OF COPY OF INTERNATIONAL
PRELIMINARY REPORT ON PATENTABILITY
(CHAPTER I OF THE PATENT COOPERATION
TREATY)
(PCT Rule 44bis.1(c))

To:



SIRAGUSA, John, M.
 Carlson, Gaskey & Olds, P.C.
 400 West Maple Road, Suite 350
 Birmingham, MI 48009
 ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year)
16 May 2013 (16.05.2013)

Applicant's or agent's file reference
67467-001PCT

IMPORTANT NOTICE

International application No.
PCT/US2011/041553

International filing date (day/month/year)
23 June 2011 (23.06.2011)

Priority date (day/month/year)
05 November 2010 (05.11.2010)

Applicant
NG, Cheong Choon

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. +41 22 338 82 70

Authorized officer
Yukari Nakamura

e-mail: pt07.pct@wipo.int

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 67467-001PCT	FOR FURTHER ACTION		See item 4 below
International application No. PCT/US2011/041553	International filing date (<i>day/month/year</i>) 23 June 2011 (23.06.2011)	Priority date (<i>day/month/year</i>) 05 November 2010 (05.11.2010)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant NG, Cheong Choon			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
<input checked="" type="checkbox"/>	Box No. I	Basis of the report																						
<input type="checkbox"/>	Box No. II	Priority																						
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																						
<input type="checkbox"/>	Box No. IV	Lack of unity of invention																						
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																						
<input type="checkbox"/>	Box No. VI	Certain documents cited																						
<input type="checkbox"/>	Box No. VII	Certain defects in the international application																						
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

	Date of issuance of this report 07 May 2013 (07.05.2013)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Yukari Nakamura
Facsimile No. +41 22 338 82 70	e-mail: pt07.pct@wipo.int

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

SIRAGUSA JOHN M.

CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE
ROAD, SUITE 350 BIRMINGHAM MI 48009 USA

PCT

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **23 FEBRUARY 2012 (23.02.2012)**

Applicant's or agent's file reference

67467-001PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2011/041553

International filing date (day/month/year)

23 JUNE 2011 (23.06.2011)

Priority date(day/month/year)

05 NOVEMBER 2010 (05.11.2010)

International Patent Classification (IPC) or both national classification and IPC

A44C 5/02(2006.01)i, A44C 5/00(2006.01)i, A44C 25/00(2006.01)i, A44C 27/00(2006.01)i

Applicant

NG, CHEONG CHOON

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/KR
Korean Intellectual Property Office
Government Complex-Daejeon, 189
Cheongsa-ro, Seo-gu, Daejeon 302-
701, Republic of Korea
Facsimile No. 82-42-472-7140



Date of completion of this opinion

22 FEBRUARY 2012 (22.02.2012)

Authorized officer

PARK, Se Young

Telephone No.82-42-481-8653



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2011/041553

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of :
 - the international application in the language in which it was filed
 - a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:
 - a. a sequence listing filed or furnished
 - on paper
 - in electronic form
 - b. time of filing or furnishing
 - contained in the international application as filed.
 - filed together with the international application in electronic form.
 - furnished subsequently to this Authority for the purposes of search.
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2011/041553

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO
Inventive step (IS)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO
Industrial applicability (IA)	Claims	<u>1-18</u>	YES
	Claims	<u>NONE</u>	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: JP 2003-520083 A (D`ORICA S.R.L) 02 July 2003
 D2: US 6880364 B1 (MICHAEL F. VIDOLIN et al.) 19 April 2005
 D3: KR 10-2001-0012609 A (CITIZEN HOLDINGS CO.,LTD) 15 February 2001
 D4: KR 10-2006-0042108 A (MONTRES RADO S.A.) 12 May 2006
 D5: JP 2004-520910 A (LOUIS VUITTON MALLETIER) 15 July 2004

Reasoned statement with regard to novelty, inventive step and industrial applicability :

1. Novelty and Inventive Step

1-1. Claims 1 and 12

The subject matter of claim 1 differ from these prior art documents in that a kit for creating an item consisting of a series of links, the device comprising a base and at least one pin bar including a plurality of pins each including a top flared portion for holding a link in a desired orientation and an opening on a front side of each of the plurality of pins. And it is not obvious to a skilled person in the art by the documents, take alone or in combination.

The subject matter of claim 12 differ from these prior art documents in that a method of creating a linked item comprising the steps of supporting at least one pin bar to a base, assembling at least two elastic bands across adjacent pins, capturing one end of an elastic band and pulling the end over until a desired link length and configuration. And it is not obvious to a skilled person in the art by the documents, take alone or in combination.

Therefore, claims 1 and 12 meets the requirements of PCT Article 33(2) and (3) with respect to novelty and inventive step.

1-2. Claims 2-11 and 13-18

Dependent claims 2-11 and 13-18 also meet the requirements of PCT Article 33(2) and (3).

Continued on Supplemental Box

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2011/041553

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of :

Box V

2. Industrial Applicability

Claims 1-18 are industrially applicable under PCT Article 33(4).

Electronic Acknowledgement Receipt

EFS ID:	16782784
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Donna Durant
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-009 PUS1
Receipt Date:	06-SEP-2013
Filing Date:	25-SEP-2012
Time Stamp:	13:18:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	009PUS1_IDS_09_06_2013.pdf	613889 <small>cc352f5690878e530899a76223beee8adb826e23</small>	no	9

Warnings:

Information:

2	Foreign Reference	JP2003520083.pdf	349189	no	16
			decedbc5dc6052e28f80c0e11a32d6a867fa bfc6		
Warnings:					
Information:					
3	Foreign Reference	JP2004520910.pdf	786941	no	31
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4	Foreign Reference	KR1020010012609.pdf	155975	no	11
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Information:					
6	Non Patent Literature	ISRWO.pdf	448685	no	9
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7	Non Patent Literature	5-16-13_IPRP.pdf	255790	no	6
			f4cac56ab14280296581ba1f1610c97ddb2 21082		
Warnings:					
Information:					
Total Files Size (in bytes):				2902740	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/626,057	09/25/2012	Cheong Choon Ng	67467-001 PUS2

CONFIRMATION NO. 7803

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

PUBLICATION NOTICE



Title:BRUNNIAN LINK MAKING DEVICE AND KIT

Publication No.US-2013-0020802-A1

Publication Date:01/24/2013

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

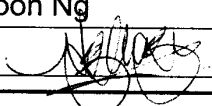
In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

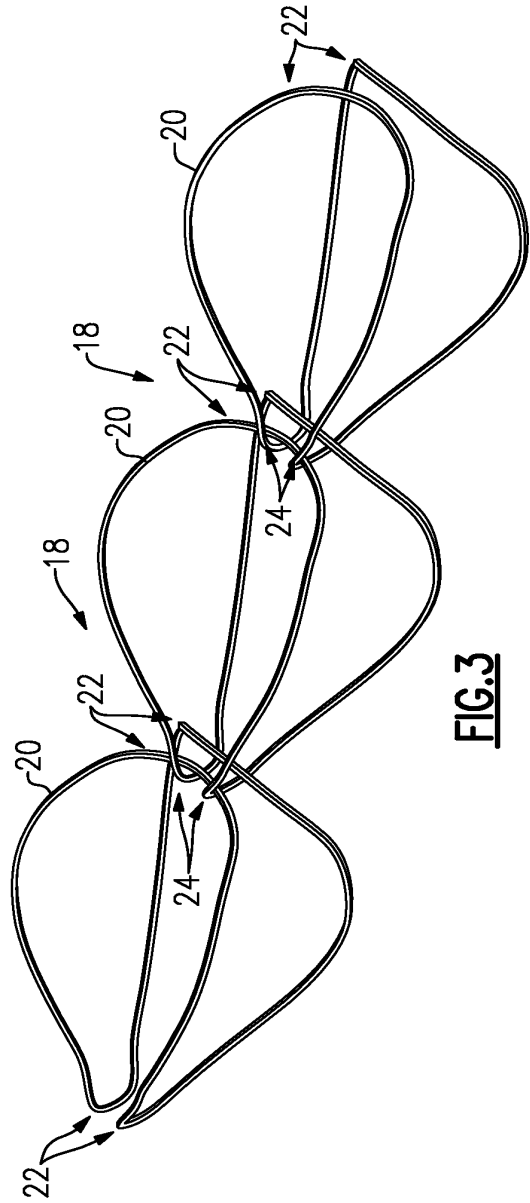
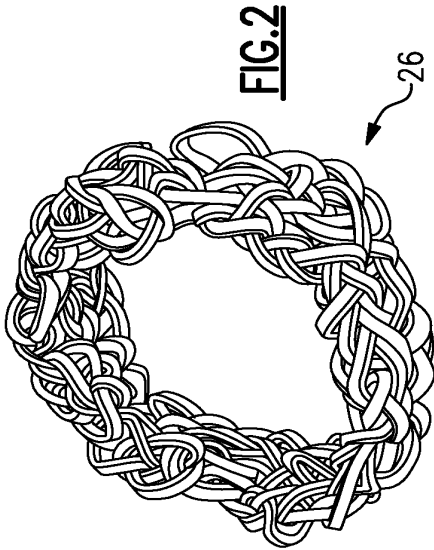
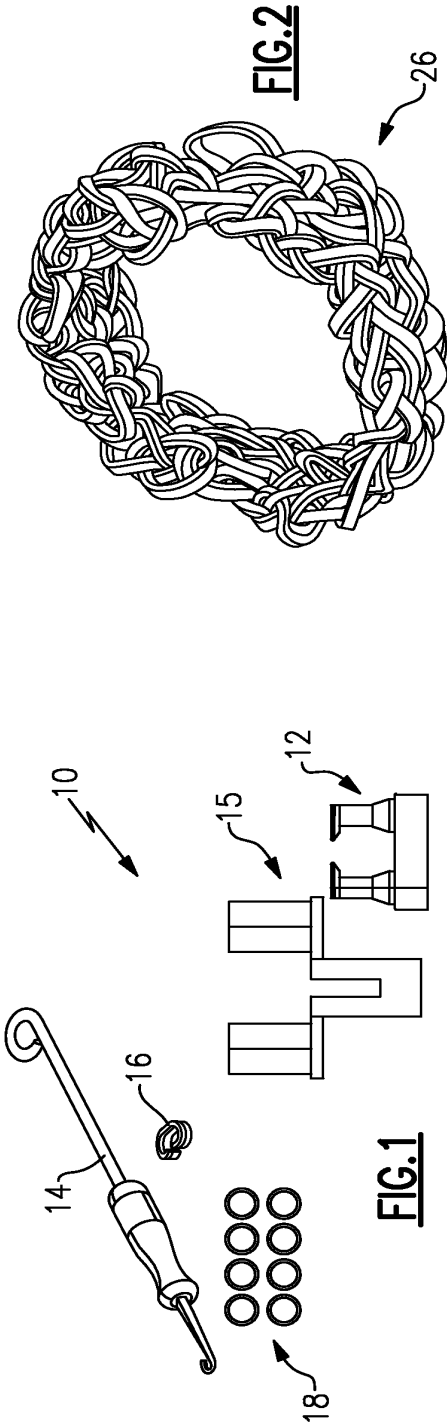
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

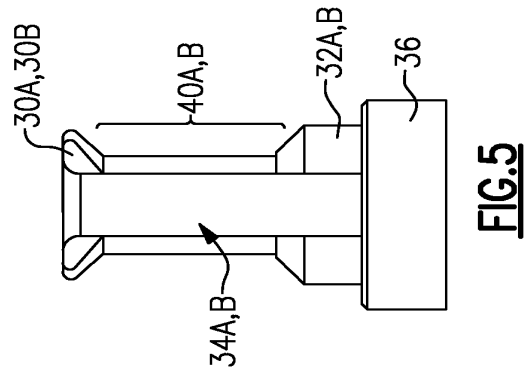
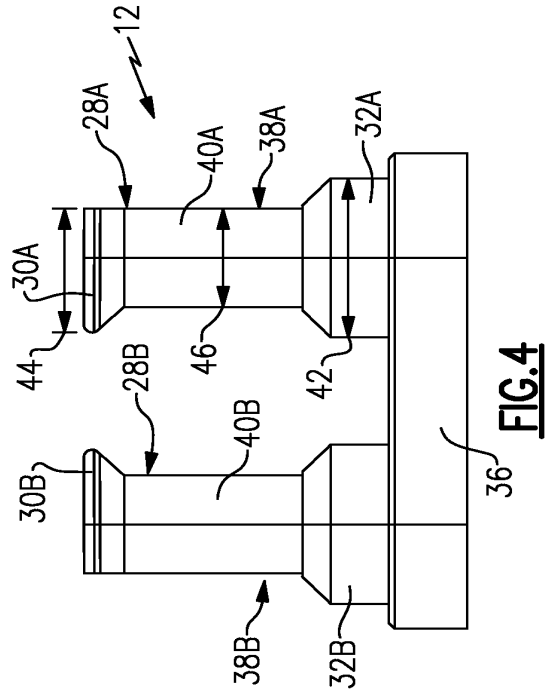
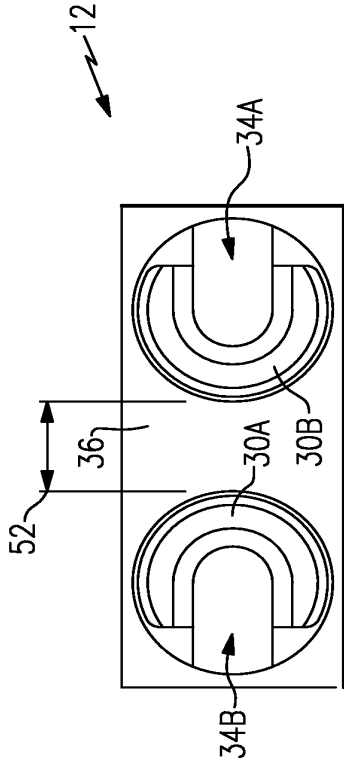
**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

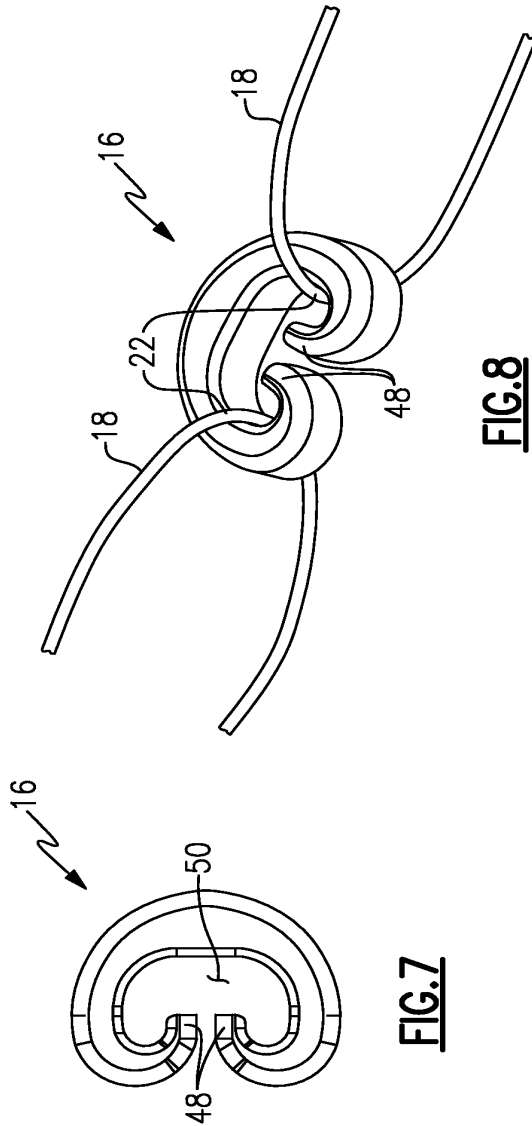
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT
<p>As the below named inventor, I hereby declare that:</p> <p>This declaration is directed to: <input type="checkbox"/> The attached application, or <input checked="" type="checkbox"/> United States application or PCT international application number <u>13/626,057</u> filed on <u>September 25, 2012</u></p> <p>The above-identified application was made or authorized to be made by me.</p> <p>I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.</p> <p>I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.</p> <p align="center">WARNING:</p> <p>Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.</p>	
<p>LEGAL NAME OF INVENTOR</p> <p>Inventor: <u>Cheong Choon Ng</u> Date (Optional): _____</p> <p>Signature: </p>	
<p>Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/SB/AIA01 form for each additional inventor.</p>	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.







1) TEMPLATE

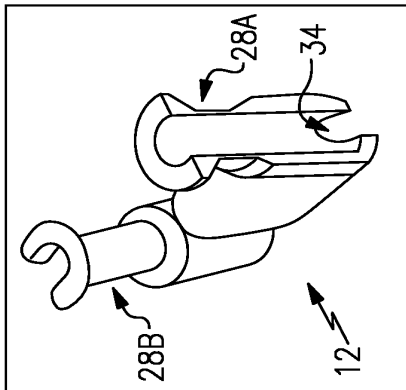


FIG. 9A

2) HOOK RB ON ONE END

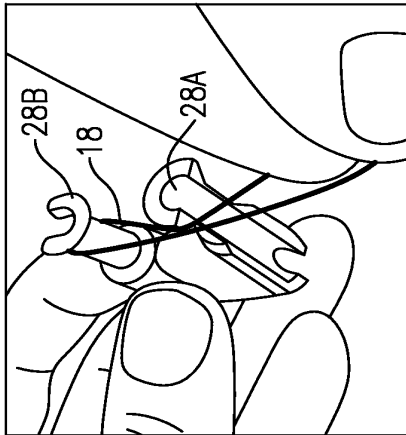


FIG. 9B

2) LOOP RB OVER

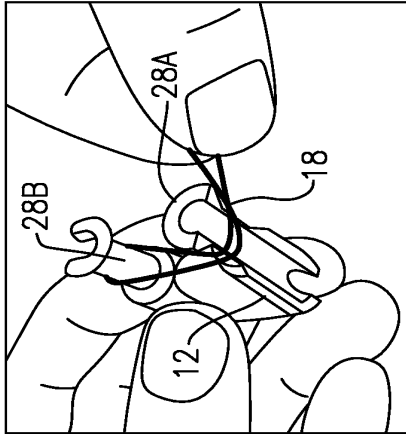


FIG. 9C

4) HOOK RB BACK ON THE PIN

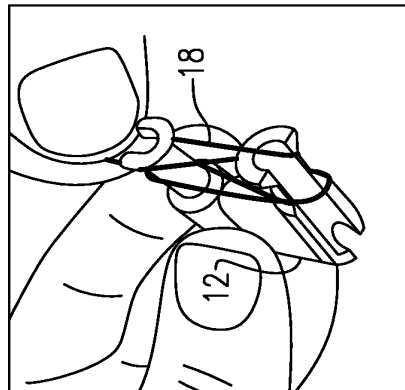


FIG. 9A

5) LOCK ONE END W/ C-CLIP

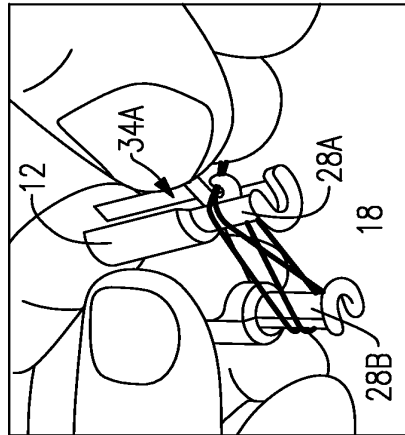


FIG. 9B

6) SLIDE THE HOOK THROUGH THE HOLLOW SLOT

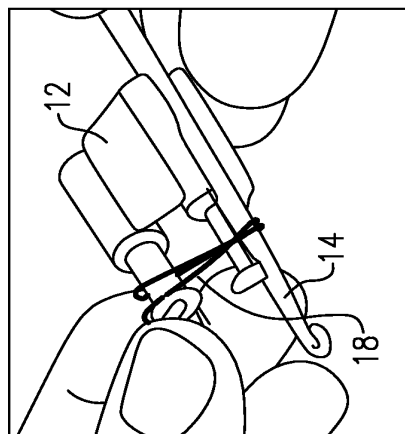


FIG. 9C

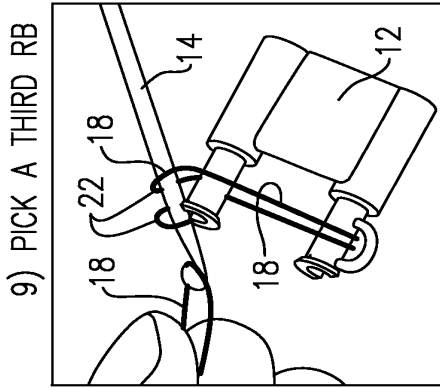


FIG. 9I

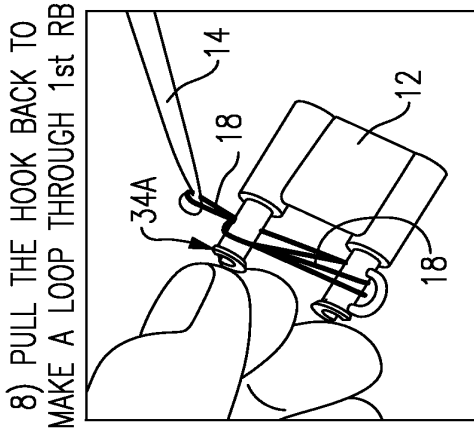


FIG. 9H

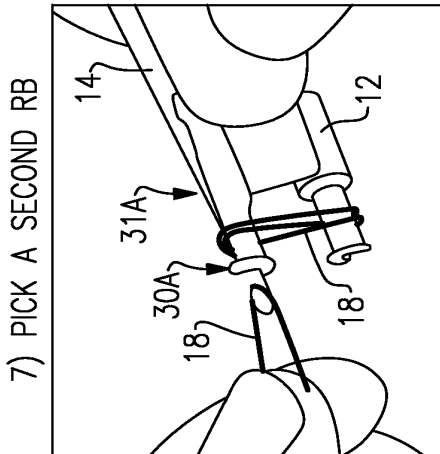


FIG. 9G

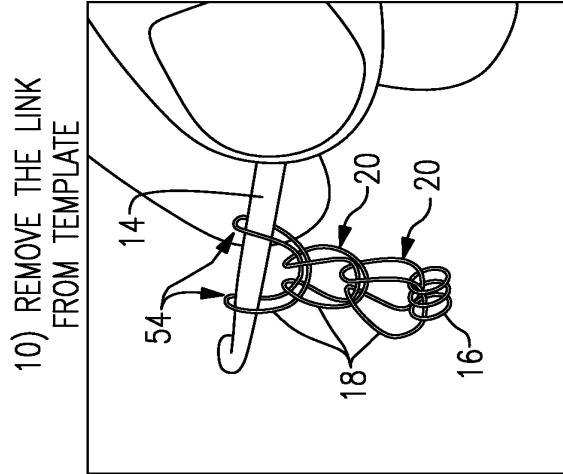


FIG. 9K

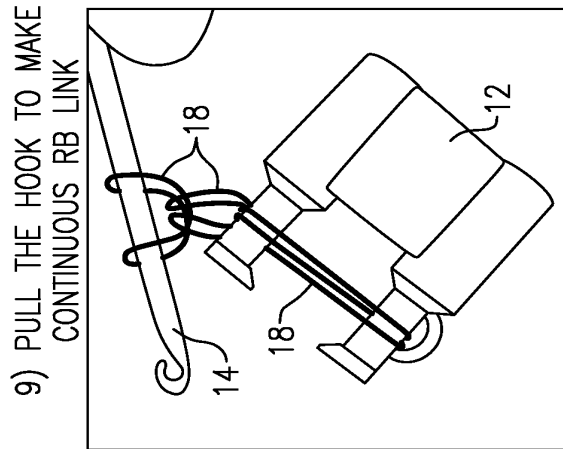
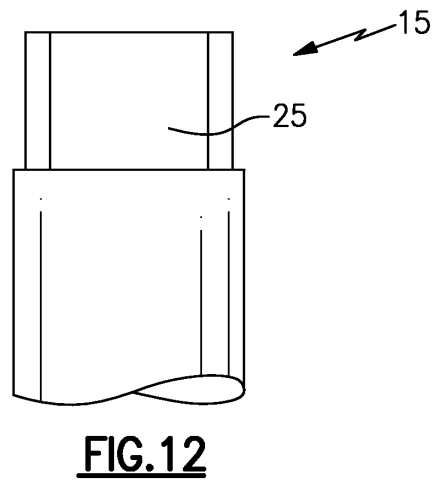
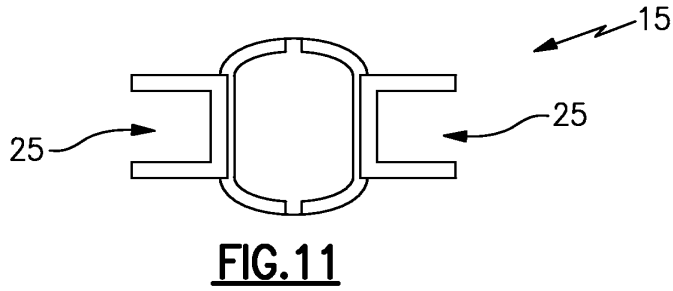
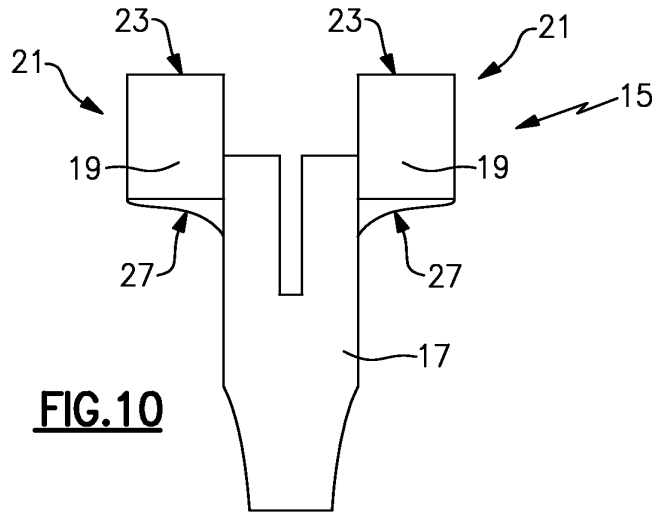


FIG. 9J



Electronic Patent Application Fee Transmittal

Application Number:	13626057				
Filing Date:	25-Sep-2012				
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT				
First Named Inventor/Applicant Name:	Cheong Choon Ng				
Filer:	John M. Siragusa/Amy Malvitz				
Attorney Docket Number:	67467-001 PUS2				
Filed as Small Entity					
Utility under 35 USC 111(a) Filing Fees					
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)	
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Late filing fee for oath or declaration	2051	1	65	65	
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
Extension-of-Time:					

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				65

Electronic Acknowledgement Receipt

EFS ID:	14029668
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Malvitz
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-001 PUS2
Receipt Date:	19-OCT-2012
Filing Date:	25-SEP-2012
Time Stamp:	14:40:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$65
RAM confirmation Number	1009
Deposit Account	501482
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Oath or Declaration filed	001PUS2_ExecutedDeclaration.pdf	69190	no	1
			72497946bda1d134ee1ccd9fe56103c2b077ce20		
Warnings:					
Information:					
2	Drawings-only black and white line drawings	67467-001PUS2_FormalDrawings.pdf	306077	no	6
			7c146bf56829b6192adec2f05b8b6d9288ad1bb9		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30179	no	2
			e0b1f44392fe77033cd46c3bec806701905cd87fc		
Warnings:					
Information:					
Total Files Size (in bytes):			405446		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 13/626,057
---	--

APPLICATION AS FILED - PART I			SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
	(Column 1)	(Column 2)					
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE <small>(37 CFR 1.16(a), (b), or (c))</small>	N/A	N/A	N/A	98		N/A	
SEARCH FEE <small>(37 CFR 1.16(k), (l), or (m))</small>	N/A	N/A	N/A	310		N/A	
EXAMINATION FEE <small>(37 CFR 1.16(o), (p), or (q))</small>	N/A	N/A	N/A	125		N/A	
TOTAL CLAIMS <small>(37 CFR 1.16(i))</small>	16	minus 20 = *	x 31 =	0.00	OR		
INDEPENDENT CLAIMS <small>(37 CFR 1.16(h))</small>	3	minus 3 = *	x 125 =	0.00			
APPLICATION SIZE FEE <small>(37 CFR 1.16(s))</small>	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT <small>(37 CFR 1.16(j))</small>				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	533		TOTAL	

APPLICATION AS AMENDED - PART II					SMALL ENTITY		OR	OTHER THAN SMALL ENTITY		
	(Column 1)	(Column 2)	(Column 3)							
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=	OR	x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee <small>(37 CFR 1.16(s))</small>							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>							OR		
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE		
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	MINUS	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)	
	Total <small>(37 CFR 1.16(i))</small>	*	Minus	**	=	x	=	OR	x	=
	Independent <small>(37 CFR 1.16(h))</small>	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee <small>(37 CFR 1.16(s))</small>							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <small>(37 CFR 1.16(j))</small>							OR		
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE		
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.</p>										



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Table with 7 columns: APPLICATION NUMBER, FILING or 371(c) DATE, GRP ART UNIT, FIL FEE REC'D, ATTY DOCKET NO, TOT CLAIMS, IND CLAIMS. Row 1: 13/626,057, 09/25/2012, 3776, 595, 67467-001 PUS2, 16, 3

CONFIRMATION NO. 7803

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

FILING RECEIPT



Date Mailed: 10/16/2012

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Inventor(s) Cheong Choon Ng, Novi, MI;
Applicant(s) Cheong Choon Ng, Novi, MI;

Power of Attorney: None

Domestic Priority data as claimed by applicant
This application is a CIP of 13/227,638 09/08/2011
which claims benefit of 61/410,399 11/05/2010

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is US 13/626,057

Projected Publication Date: 01/24/2013

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

BRUNNIAN LINK MAKING DEVICE AND KIT

Preliminary Class

132

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/626,057	09/25/2012	Cheong Choon Ng	67467-001 PUS2

CONFIRMATION NO. 7803

26096
CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

NOTICE



Date Mailed: 10/16/2012

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Cheong Choon Ng
Applicant may submit the inventor's oath or declaration at any time before the Notice of Allowance and Fee(s) Due, PTOL-85, is mailed.

Electronic Acknowledgement Receipt

EFS ID:	13829937
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
10/15/2012 SSOX11 00000004 501482 13626057 01 FC:2051 65.00 DA Title of Invention: BRUNNIAN LINK MAKING DEVICE AND KIT	
First Named Inventor/Applicant Name:	Cheong Choon Ng
Confirmation Number: Customer Number:	7803 26096
Filer:	John M. Siragusa/Amy Malvitz
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-001 PUS2
Receipt Date:	25-SEP-2012
Filing Date:	
Time Stamp:	13:17:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Customer Number:	26096
Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$530
RAM confirmation Number	12394
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BRUNNIAN LINK MAKING DEVICE AND KIT

REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation in part of U.S. Application No. 13/227,638 filed on September 8, 2011, which claims priority to U.S. Provisional Application No. 61/410,399 filed on November 5, 2010.

BACKGROUND

[0002] This disclosure generally relates to method and device for creating a linked item. More particularly, this disclosure relates to a method and device for creating a linked wearable item from elastic bands.

[0003] Kits that include materials for making a uniquely colored bracelet or necklace have always enjoyed some popularity. However such kits usually just include the raw materials such as different colored threads and beads and rely on the individual's skill and talent to construct a usable and desirable item. Accordingly there is a need and desire for a kit that provides not only the materials for creating a unique wearable item, but also that simplifies construction to make it easy for people of many skill and artistic levels to successfully create a desirable and durable wearable item.

SUMMARY

[0004] A Brunnian link is a link formed from a closed loop doubled over itself to capture another closed loop to form a chain. Elastic bands can be utilized to form such links in a desired manner. The example kit and device provides for creation of Brunnian link articles. Moreover, the example kit provides for the successful creation of unique wearable articles using Brunnian link assembly techniques.

[0005] The example kit includes a template for mounting an initial band and a hook utilized for attaching additional bands to the initial bands placed on the template. The template includes pins that hold the initial band in place while additional bands are linked onto each other. The kit further includes a clip utilized to attach ends once the desired length is formed.

[0006] These and other features disclosed herein can be best understood from the following specification and drawings, the following of which is a brief description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Figure 1 perspective view of an example kit for creating a Brunnian link article.

[0008] Figure 2 is schematic view of Brunnian link articles.

[0009] Figure 3 is a schematic view of a series of Brunnian links.

[0010] Figure 4 is a side view of an example template.

[0011] Figure 5 is an end view of the example template.

[0012] Figure 6 is a top view of the example template.

[0013] Figure 7 is a plan view of an example clip for securing loose ends of a Brunnian linked article.

[0014] Figure 8 is perspective view illustrating elastic bands secured with the example clip.

[0015] Figures 9A-9K are views of an example method of creating a Brunnian link article using the example template and kit.

[0016] Figure 10 is a side view of another example template.

[0017] Figure 11 is a top view of the example template shown in Figure 10.

[0018] Figure 12 is a side view of the example template shown in Figures 10 and 11.

DETAILED DESCRIPTION

[0019] Referring to Figures 1 and 2, an example kit is indicated at 10 for creating Brunnian link items such as bracelets, necklaces and other wearable or decorative article as generally indicated at 26 in Figure 2. The example kit 10 includes one of a template 12 (Figures 4-6), or 15 (Figures 10-12), a clip 16 and a hook 14. The example kit 10 also includes a number of elastic members 18 that are used with the kit 10 to form Brunnian links for the resulting wearable article 26. The elastic members 18 are consumed as articles 26 are fabricated, and are replaced and replenished with additional elastic members. Moreover, the example elastic

members 18 are of a size corresponding with the example template 12. Further, although a single clip 16 is illustrated, the example kit 10 will include many clips 16 to provide for the fabrication of many articles 26.

[0020] Referring to Figure 3, a Brunnian link 20 is formed from a continuous looped structure without forming an actual knot. Several links 20 are formed in a chain to form a circular structure. Ends 22 of each elastic member 18 are secured and a durable wearable article 26 is created. In this example three links 20 forming a single chain. Each link 20 is formed by capturing the ends 22 of one loop structure with a mid portion 24 of another loop structure in series. Each link 20 depends on the previous and subsequent links 20 to maintain the desired shape and integrity. Removing one link 20 results in all of the links becoming loose from each other.

[0021] Referring to Figures 4, 5 and 6, the example template 12 includes two pins 28A, 28B spaced a distance 52 apart from each other. Each of the pins 28A, 28B includes a flange 30A, 30B, a base 32A, 32B, and an access groove 34A,34B. The pins 28A, 28B are connected at the base 32A, 32B by a bridge 36. The bridge 36 defines the distance 52 between the pins 28A, 28B.

[0022] The access grooves 34A, 34B are disposed on outward facing sides 38A, 38B of the template 12. Each of the access grooves 34A, 34B extend entirely through the pins 28A, 28B including through the flanges 30A, 30B and the bases 32A, 32B and the bridge 36.

[0023] The pins 28A, 28B include a barrel portion 40A, 40B between the corresponding flanges 30A, 30B. The barrel portion 40A, 40B is formed of a diameter 46 that is less than a diameter 44 of the flanges 30A, 30B and a diameter 42 of the base 32A, 32B. The barrel portion 40A, 40B support the elastic band 18, while the flanges 30A, 30B and the base 32A, 32B prevent the elastic bands 18 from sliding off.

[0024] Each of the flanges 30A, 30B is interrupted by the corresponding access grooves 34A, 34B. The access grooves 34A, 34B are sized to receive an end of the hook tool 14.

[0025] Referring to Figures 7 and 8, the example clip 16 is generally C-shaped with inwardly facing ends 48. The inwardly facing ends 48 point inwardly to an open space 50 where

parts of the elastic members are kept 18. The inwardly facing ends 48 prevent ends 22 from sliding out from the inner area 50 off of the clip 16.

[0026] Referring to Figures 9A-K, the example template 12 is utilized for the formation of a series of Brunnian links 20 as illustrated in Figure 3. As appreciated, elastic bands 18 can be difficult to manipulate and hold during the construction of a desired article. The example template 12 provides for holding of an initial number of links 20 to facilitate the initial few links of a desired linked article. The template 12 includes the first and second pins 28A, 28B along with the full height groove 34.

[0027] The initial step illustrated in Figure 9B includes assembling a first end of an elastic band 18 on to the second pin 28B. The first elastic band 18 is then pulled and looped around the first pin 28A as shown in Figure 9C. Once looped around the first pin 28A, the second end 18 is hooked back onto the second pin 28B as shown in Figure 9D. With the first elastic band 18 assembled to the template 12 a clip 16 as is shown in Figure 9E is attached to the band 18. The clip 16 is inserted into the groove 34A of the first pin 28A and under the ends of the elastic band 18 such that the band 18 is received within the open area 50.

[0028] Once the clip 16 is hooked to the ends 22 of the elastic band 18, the hook tool 14 is inserted through the access groove 34 as shown in Figure 9F. A second elastic band 18 is then hooked by the hook 14 as shown in Figure 9G. The end of the hook 14 is shown extending through the access groove 34A such that it extends outward from the flange 30A to provide for hooking of the second band 18.

[0029] One end of the second band 18 is then pulled through the groove 34A while holding the other end as shown in Figure 9H. The hook 14 is then put through the ends 22 of the second band 18 to hold them in an orientation where the midsection 24 is wrapped about the first band 18 that is secured to the template 12 as shown in Figure 9I. A third band 18 is then hooked utilizing the hook 14 and pulled through the second band 18.

[0030] The third band 18 is looped over the hook 14 to hold the third band 18 in the orientation illustrated in Figure 9J. The hook 14 is utilized to hold one band 18 onto the subsequent band 18 and prepare for the threading of subsequent band 18 through the previous band 18. The process is repeated until a desired number of bands 18 are linked together to form

a chain as illustrated Figure 9K. Once the desired length and number of links 20 are formed, the first band 18 including the clip 16 can be removed from the template 12. The clip 16 is then circled around and clipped onto the loose ends indicated at 54 to complete the article.

[0031] Referring to Figures 10, 11 and 12, another template 15 includes a holder 17 that supports pins 21. Each of the pins 21 includes a first or top end 23 and a base end 27. The entire template 15 is a single part that is held during creation of the article. The pins 21 provide support for the elastic member 18 during fabrication of a linked article similar to that indicated at 26 in Figure 2. The example template 15 is utilized according to the same assembly procedure set out in Figures 9a-k.

[0032] Accordingly, the example kit and method provide for the creation of many different combinations and configurations of Brunnian links for the creation of bracelets, necklaces, and other wearable items. Moreover, the example kit is expandable to further create and expand the capabilities of potential Brunnian link creations. Further, the example kit provides for the creation of such links and items in an easy manner allowing persons of varying skill levels to be successful in creating unique wearable items.

[0033] Although an example embodiment has been disclosed, a worker of ordinary skill in this art would recognize that certain modifications would come within the scope of this disclosure. For that reason, the following claims should be studied to determine the scope and content of this invention.

CLAIMS

What is claimed is:

1. A device for creating an item consisting of a series of links, the device comprising:

a template including at least two pins spaced part from each other, each of the pins including a first end, a base end, and an access groove.

2. The device as recited in claim 1, including a bridge portion extending between the base end of each of the pins.

3. The device as recited in claim 2, wherein the access groove is disposed on outward facing sides of the template.

4. The device as recited in claim 2, wherein each of the access grooves extend entirely through each of the pins including the first end and the base end.

5. The device as recited in claim 1, wherein each of the pins include a barrel portion between the first end and the base end.

6. The device as recited in claim 5, wherein the base end includes a diameter greater than a diameter of the barrel portion.

7. The device as recited in claim 1, wherein the first end is interrupted by the groove.

8. A method of creating a linked item comprising the steps of:
assembling a first end of an elastic band on to a first pin of a template, where the template includes at least two pins spaced part from each other, each of the pins including a first end, a base end, and an access groove;
looping a second end of the elastic band around a second pin of the template;
assembling the second end of the elastic band onto the first pin;
pulling a second elastic band through the access groove and making a loop with the first and second ends of the second elastic band; and
capturing and pulling subsequent ends through the looped ends of the previous elastic band until a desired link length and configuration is obtained.

9. The method as recited in claim 8, wherein capturing one end of the elastic band includes using a hook tool reaching into the access groove of the pin to extend below the top most elastic band and grasp a bottom elastic band with the hook tool.

10. The method as recited in claim 9, including the step of inserting ends of the elastic bands into a clip to form the linked item.

11. A kit for creating an item consisting of a series of links, the kit comprising:
a template including at least two pins spaced part from each other, each of the pins including a first end, a base end, and an access groove; and
at least one clip including inward facing ends disposed on each side of an opening for securing ends of the series of links together.

12. The kit as recited in claim 11, wherein the clip comprises a C-shape and the inward facing ends extend in a direction perpendicular to the opening.

13. The kit as recited in claim 12, wherein the clip defines an interior space for receiving portions of elastic members and the inward facing ends extend into the interior space for preventing elastic members from moving through the opening.

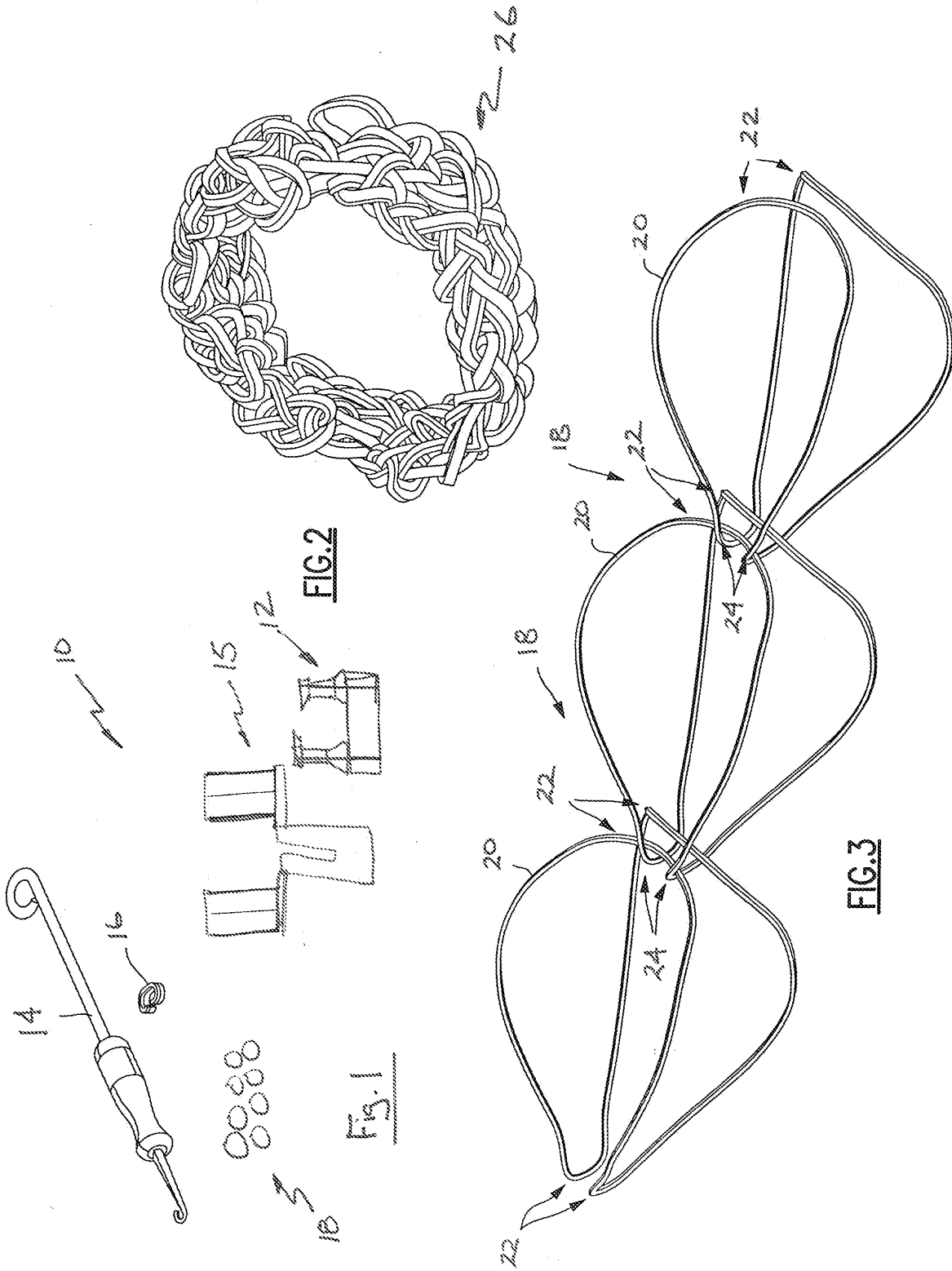
14. The kit as recited in claim 12, including a hook for manipulating elastic members relative to each other.

15. The kit as recited in claim 14, including a plurality of elastic members for forming the series of links.

16. The kit as recited in claim 15, wherein the series of links comprise a series of Brunnian links.

ABSTRACT OF THE DISCLOSURE

A Brunnian link is a link formed from a closed loop doubled over itself to capture another closed loop to form a chain. Elastic bands can be utilized to form such links in a desired manner. A disclosed kit includes a template for mounting an initial band and a hook utilized for attaching additional bands to the initial bands placed on the template. The template includes pins that hold the initial band in place while additional bands are linked onto each other. The kit further includes a clip utilized to attach ends once the desired length is formed.



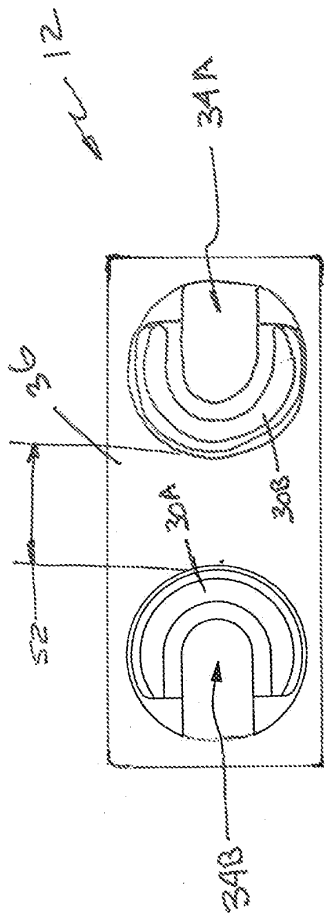


Fig. 6

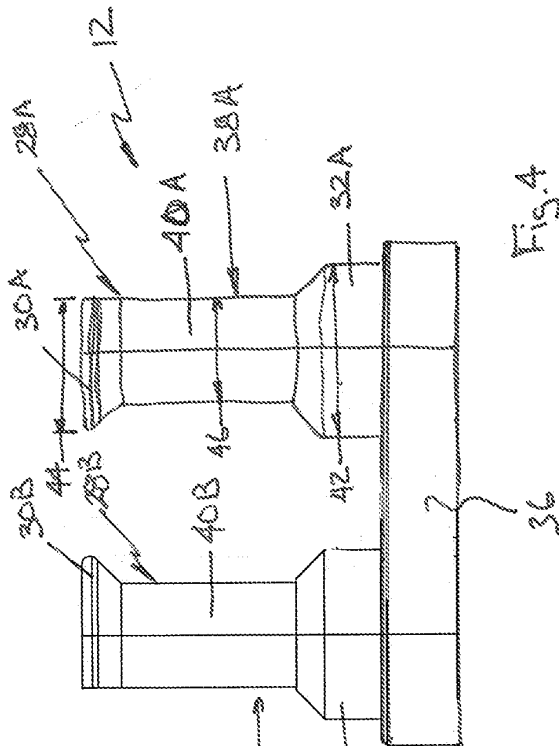


Fig. 4

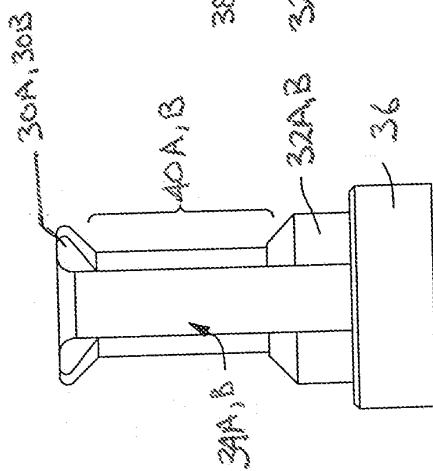
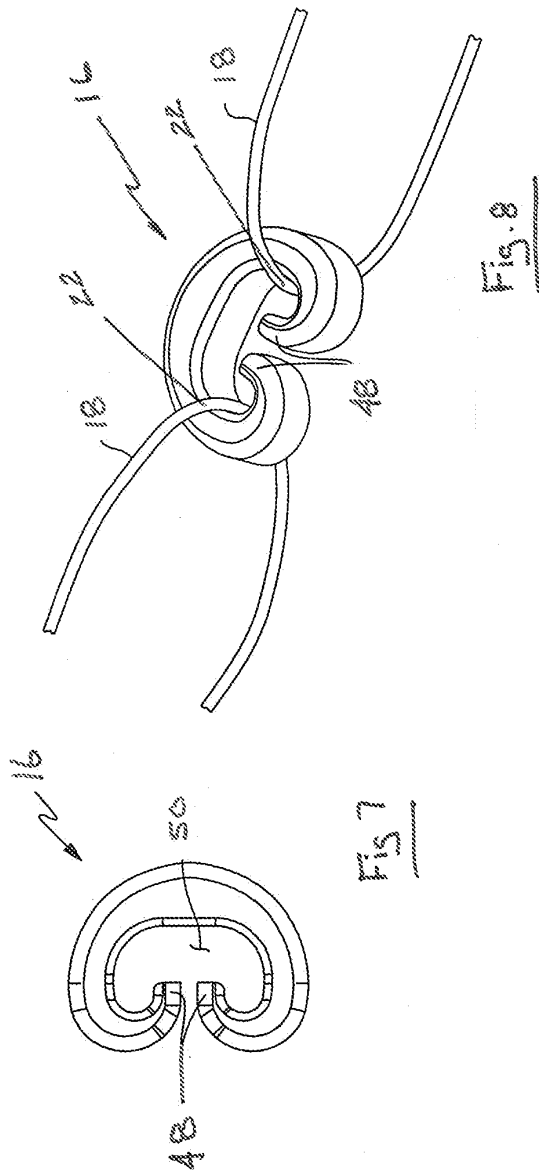
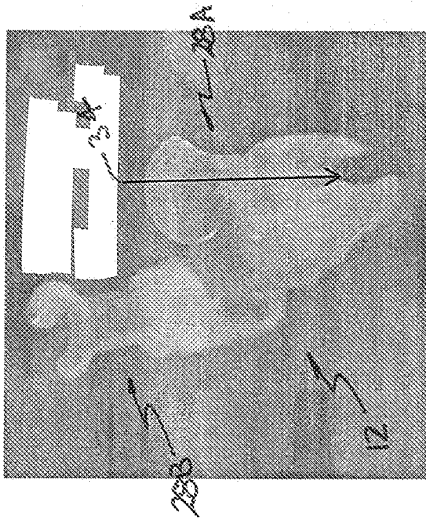


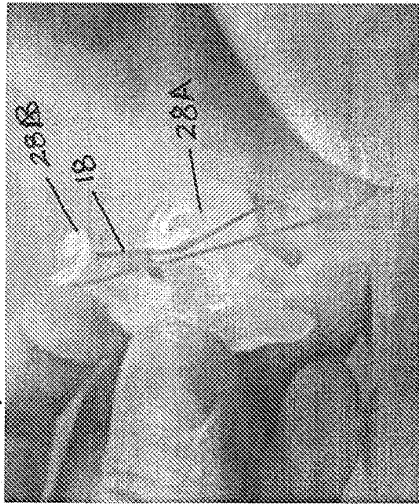
Fig. 5



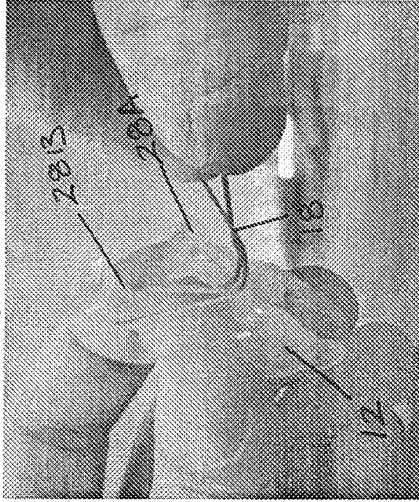
1) Template



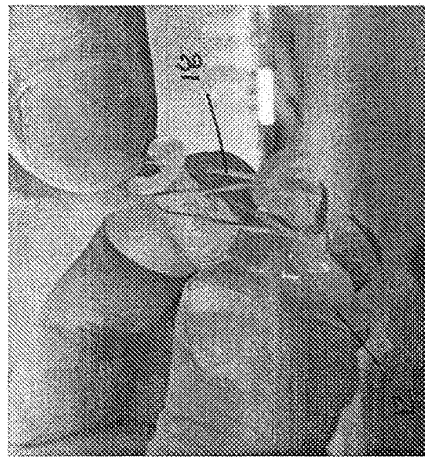
2) Hook RB on one end



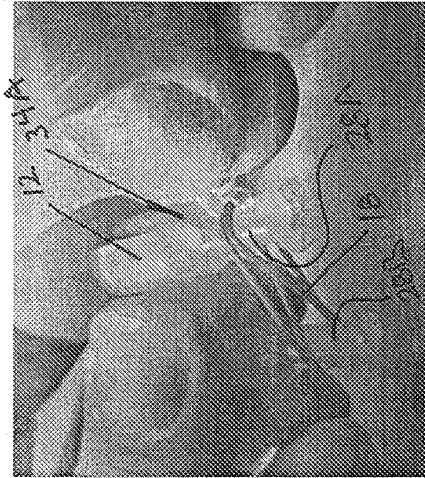
3) Loop RB over



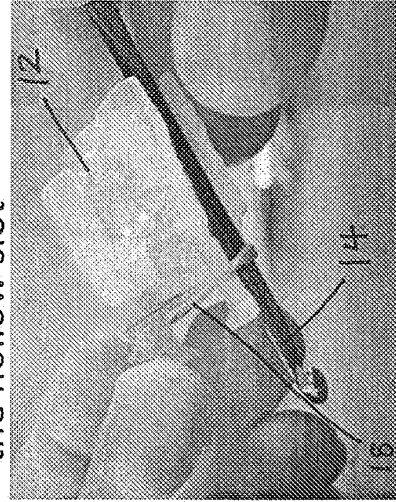
4) Hook RB back on the pin



5) Lock one end w/ C-clip



6) Slide the hook through the hollow slot



7) Pick a second RB

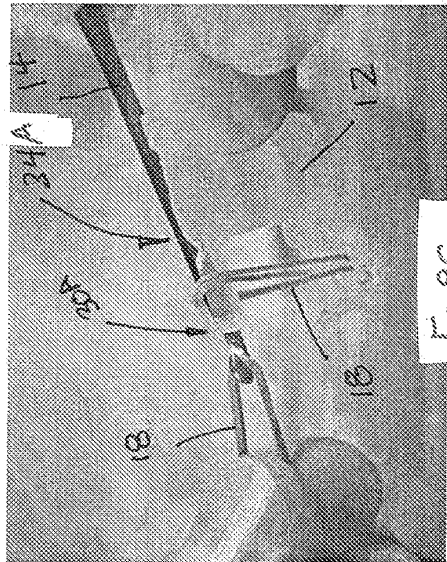


Fig. 9G

9) Pull the hook to make continuous RB link

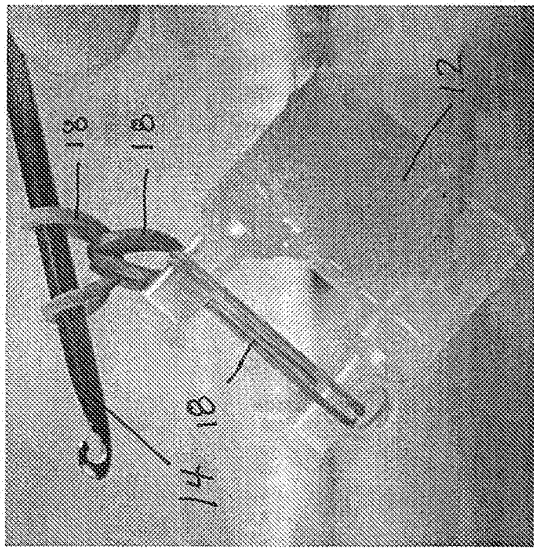


Fig. 9J

8) Pull the hook back to make a loop through 1st RB

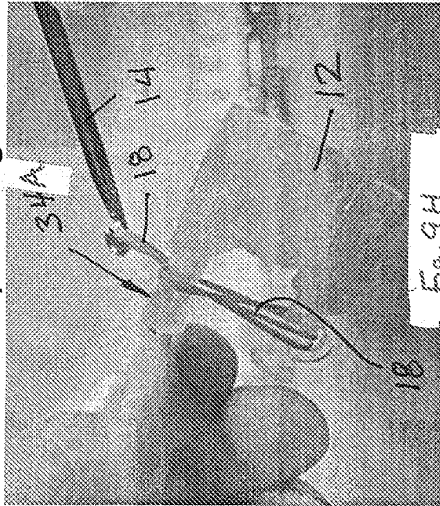


Fig. 9H

10) Remove the link from template

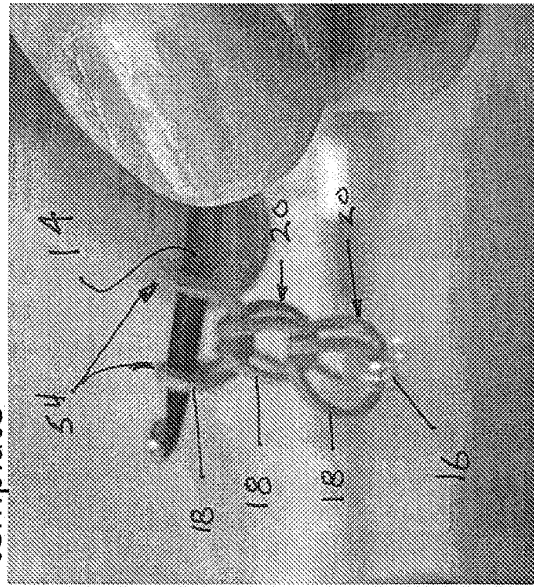


Fig. 9K

9) Pick a third RB

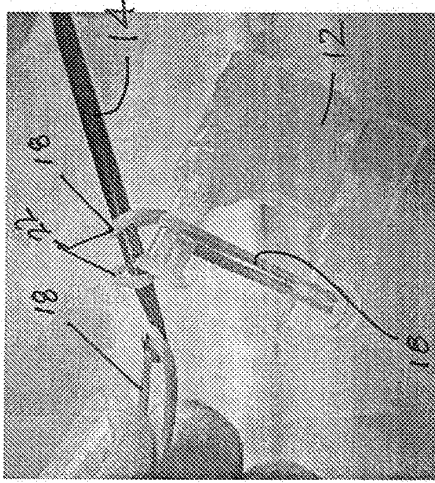


Fig. 9I

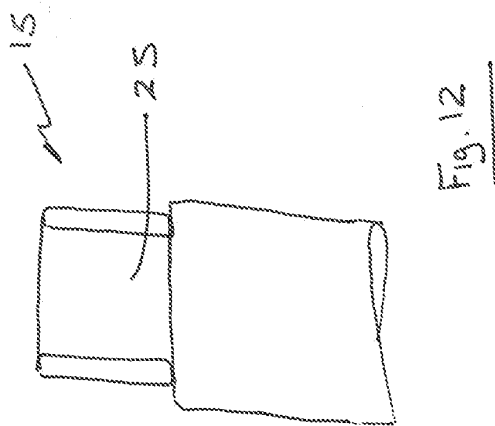
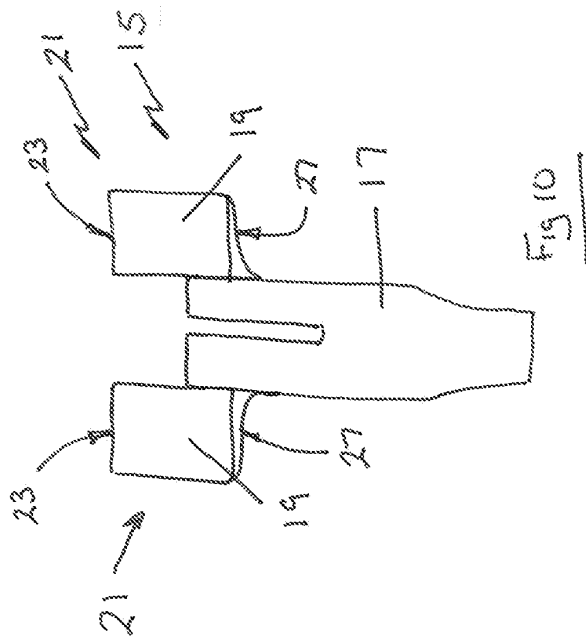
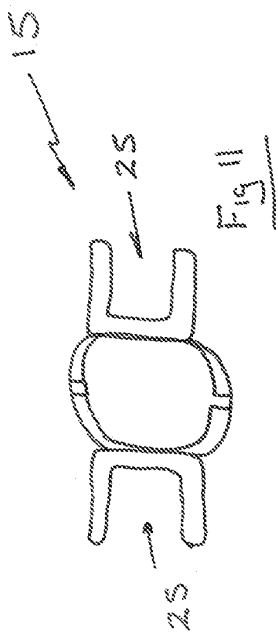


Fig. 12

Fig. 10

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-001 PUS2
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

<input type="checkbox"/>	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
--------------------------	---

Inventor Information:

Inventor 1					<input type="button" value="Remove"/>
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Cheong	Choon	Ng		
Residence Information (Select One) <input checked="" type="radio"/> US Residency <input type="radio"/> Non US Residency <input type="radio"/> Active US Military Service					
City	Novi	State/Province	MI	Country of Residence	US
Mailing Address of Inventor:					
Address 1	44926 Paine Dr.				
Address 2					
City	Novi	State/Province	MI		
Postal Code	48377	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					<input type="button" value="Add"/>

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).	
<input type="checkbox"/> An Address is being provided for the correspondence information of this application.	
Customer Number	26096
Email Address	<input type="button" value="Add Email"/> <input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		
Attorney Docket Number	67467-001 PUS2	Small Entity Status Claimed	<input checked="" type="checkbox"/>
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)	6	Suggested Figure for Publication (if any)	

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-001 PUS2
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

Publication Information:

Request Early Publication (Fee required at time of Request 37 CFR 1.219)

Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer number will be used for the Representative Information during processing.

Please Select One:	<input checked="" type="radio"/> Customer Number	<input type="radio"/> US Patent Practitioner	<input type="radio"/> Limited Recognition (37 CFR 11.9)
Customer Number			

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

Prior Application Status		<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation in part of	13/227638	2011-09-08
Prior Application Status	Pending	<input type="button" value="Remove"/>	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13/227638	non provisional of	61/410399	2010-11-05
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Foreign Priority Information:

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

<input type="button" value="Remove"/>			
Application Number	Country i	Filing Date (YYYY-MM-DD)	Priority Claimed
			<input checked="" type="radio"/> Yes <input type="radio"/> No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-001 PUS2	
		Application Number		
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT			

Authorization to Permit Access:

<input checked="" type="checkbox"/> Authorization to Permit Access to the Instant Application by the Participating Offices
<p>If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application.</p> <p>In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application.</p> <p>In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.</p>

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.				
Applicant 1				
<p>If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.</p>				
<input type="button" value="Remove"/>				
<input type="radio"/> Assignee	<input type="radio"/> Legal Representative under 35 U.S.C. 117			
<input type="radio"/> Person to whom the inventor is obligated to assign.	<input type="radio"/> Person who shows sufficient proprietary interest			
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:				
Name of the Deceased or Legally Incapacitated Inventor : <input type="text"/>				
If the Assignee is an Organization check here. <input type="checkbox"/>				
Prefix	Given Name	Middle Name	Family Name	Suffix

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	67467-001 PUS2
		Application Number	
Title of Invention	BRUNNIAN LINK MAKING DEVICE AND KIT		

Mailing Address Information:			
Address 1			
Address 2			
City		State/Province	
Country ⁱ		Postal Code	
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button.			<input type="button" value="Add"/>

Signature:

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications					
Signature	/John M. Siragusa/			Date (YYYY-MM-DD)	2012-09-25
First Name	John M.	Last Name	Siragusa	Registration Number	46174
Additional Signature may be generated within this form by selecting the Add button.					<input type="button" value="Add"/>

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:				
Filing Date:				
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT			
First Named Inventor/Applicant Name:	Cheong Choon Ng			
Filer:	John M. Siragusa/Amy Malvitz			
Attorney Docket Number:	67467-001 PUS2			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	95	95
Utility Search Fee	2111	1	310	310
Utility Examination Fee	2311	1	125	125
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				530

Electronic Acknowledgement Receipt

EFS ID:	13829937
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Malvitz
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-001 PUS2
Receipt Date:	25-SEP-2012
Filing Date:	
Time Stamp:	13:17:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$530
RAM confirmation Number	12394
Deposit Account	501482
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

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Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		67467-001PUS2_Application.pdf	45378 3666a9c6b5c8d511674dd2bbc63d45876a9ac7fd	yes	9
Multipart Description/PDF files in .zip description					
		Document Description	Start	End	
		Specification	1	5	
		Claims	6	8	
		Abstract	9	9	
Warnings:					
Information:					
2	Drawings-only black and white line drawings	67467-001PUS2_Drawings.pdf	5615761 3c26842804fd7eeb5753f581d7912534df654b6d	no	6
Warnings:					
Information:					
3	Application Data Sheet	001PUS2_AppDataSheet_filewithapp.pdf	1396076 39c303d34d0686645c11313d3d18ecc3a7032b4d	no	5
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	33052 c1567c29d0282e2f57b17fb0e6531ea5b4b01721	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			7090267		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		67467-001 PUS2	

U.S. PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1	6880364		2005-04-19	Vidolin et al.	

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Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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	1	2003-520083	JP		2003-07-02	D'Orica S.R.L.		<input type="checkbox"/>
	2	2004-520910	JP		2004-07-15	Louis Vuitton Malletier		<input type="checkbox"/>
	3	10-2001-0012609	KR		2001-02-15	Citizen Holdings Co., Ltd.		<input type="checkbox"/>

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		13626057	
	Filing Date		2012-09-25	
	First Named Inventor	Cheong Choon Ng		
	Art Unit			
	Examiner Name			
	Attorney Docket Number		67467-001 PUS2	

	4	10-2006-0042108	KR		2006-05-12	Montres Rado S.A.	<input type="checkbox"/>
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	International Search Report & Written Opinion for PCT Application No. PCT/US2011/041553 mailed on February 23, 2012.	<input type="checkbox"/>

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Examiner Signature		Date Considered	
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¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	13626057
	Filing Date	2012-09-25
	First Named Inventor	Cheong Choon Ng
	Art Unit	
	Examiner Name	
	Attorney Docket Number	67467-001 PUS2

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John M. Siragusa/	Date (YYYY-MM-DD)	2012-09-25
Name/Print	John M. Siragusa	Registration Number	46174

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	13830058
Application Number:	13626057
International Application Number:	
Confirmation Number:	7803
Title of Invention:	BRUNNIAN LINK MAKING DEVICE AND KIT
First Named Inventor/Applicant Name:	Cheong Choon Ng
Customer Number:	26096
Filer:	John M. Siragusa/Amy Malvitz
Filer Authorized By:	John M. Siragusa
Attorney Docket Number:	67467-001 PUS2
Receipt Date:	25-SEP-2012
Filing Date:	
Time Stamp:	13:25:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	001PUS2_IDS_filewithapp.pdf	612352 <small>f6dc2734bd6361ff9c8d8137e1e27ccd5db b1ab</small>	no	4

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Information:

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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Application Number: 13626057

Document Date: 09/25/2012

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