



- (51) International Patent Classification:
F41H 13/00 (2006.01) *F41B 15/00* (2006.01)
- (21) International Application Number:
PCT/US2012/065037
- (22) International Filing Date:
14 November 2012 (14.11.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/559,753 15 November 2011 (15.11.2011) US
13/480,342 24 May 2012 (24.05.2012) US
- (71) Applicant: **ARMABAND, LLC** [US/US]; 1700
Thorndale Court, Corinth, TX 76210 (US).
- (72) Inventor: **HARRIS, Christopher, Lee**; 5000 Eldorado
Parkway, Suite 150-152, Frisco, TX 75033 (US).
- (74) Agent: **KLEMCHUK KUBASTA LLP**; C/o: Drake,
Kirby B., 8150 N. Central Expressway, 10th Floor, Dallas,
TX 75206 (US).
- (81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM,
DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,

HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA,
ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ,
UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a
patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the
earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*

(54) Title: SELF DEFENSE HAND BAND

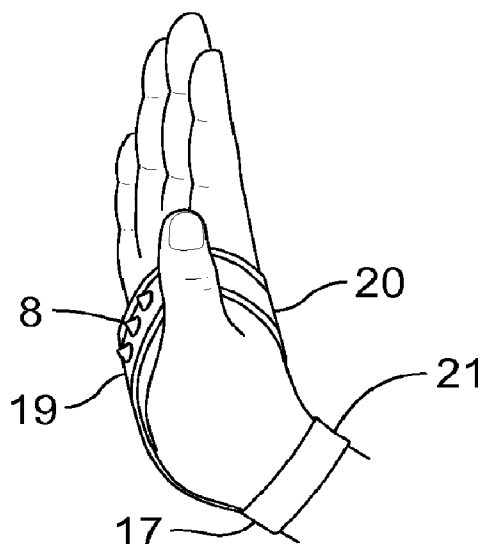


Figure 6

(57) Abstract: A protective device to be worn around the wrist of the user may include a wristband to be positioned around the wrist of the user and a hand band to be positioned around the wrist of the user in a first state and to be positioned around the hand of the user in a second state. The wristband may include a nerve point tool to scratch an assailant. The hand band may include a nerve point tool to scratch an assailant.

WO 2013/074642 A1

SELF DEFENSE HAND BAND

Priority

The present invention claims priority to U.S. Non-Provisional Application No. 13/480,342 filed May 24, 2012 which claims priority under 35 USC section 119 to U.S. Provisional Application No. 61/559,753 which was filed on November 15, 2011.

Field of the Invention

The present invention relates to a protection device and more particularly to a protection device to help a person protect him or herself against a physical assault and to help escort a person.

Background

Crimes against a person involving physical violence are one of the worst crimes in modern society. These types of crimes may strike suddenly without a lot of warning and consequently may limit the ability to call for help or to flee the attacker. As a consequence, it may be necessary to have a protection device which is readily available. In some jurisdictions, it may be against the law to carry a gun. Other types of protective devices such as knives may be difficult to keep readily available. There is a need for a protective device that can be easily accessed.

Summary

A protective device to be worn around the wrist of the user may include a wristband to be positioned around the wrist of the user and a hand band to be positioned around the wrist of the user in a first state and to be positioned around the hand of the user in a second state.

The wristband may include a nerve point tool to scratch an assailant.

The hand band may include a nerve point tool to scratch an assailant.

The wristband may be connected to the hand band with a fastener.

The wristband may include an interior band portion having a nerve point tool.

The hand band may include a palm band portion having a nerve point tool.

The hand band may include a back hand band portion having a nerve point tool.

Brief description of the Drawings

The invention may be understood by reference to the following description taken in conjunction with the accompanying drawings, in which, like reference numerals identify like elements, and in which:

Figure 1 illustrates a front perspective view of the protection device of the present invention;

Figure 2 illustrates a back perspective view of the protection device of the present invention;

Figure 3 illustrates a perspective view of a protection device of the present invention including the wristband and the hand band;

Figure 4 illustrates a perspective view of a protection device of the present invention including the wristband and the hand band;

Figure 5 illustrates a perspective view of the protection device of the present invention including the wristband and hand band;

Figure 6 illustrates a side perspective view of the protection device of the present invention including the wristband and hand band.

Detailed Description

The protection device 100 may include a double-banded wrist band which may include a wristband 16 and a hand band 18 which may be positioned over the wristband 16 in a first state which may be an unarmed state. The wristband 16 and the hand band 18 may be formed from flexible and expandable material so that the wristband 16 and the hand band 18 may be placed over the hand and onto the wrist of the user. Furthermore, the hand band 18 may be expanded and extend over the thumb of the user to extend over the palm of the hand of the user. The protection device 100 may be extended to a second state which may be an unarmed state. The protection device 100 can be armed by pulling the hand band 18 over the thumb and positioning the hand band 18 naturally between the thumb and index finger while the wristband 16 remains around the wrist of the user. The hand band 18 that is now resting in the palm of the hand may include a nerve point tool 8 to be used to scratch or to activate/stimulate a nerve point of an opponent or assailant and may be formed from metal, a hard plastic or other appropriate material which may include protruding points and edges, which can be used to defend one's self or to escort a person.

Description of Problem(s) Solved by Invention: The protection device

100 provides a significant mechanical advantage to the user when using their hands to defend themselves against an attacker by pressing, rubbing, or striking any exposed part of the attacker's body with the protection device 100. As a result, one can better defend himself or herself.

How the Invention is an Improvement over Existing Technology: A significant disadvantage of most self-defense products is their lack of immediate availability when needed most. The protection device 100 may be continuously safely secured to either one wrist or both wrists, making the protection device 100 available at all times instead of on a keychain, in a purse, or in a pocket. The availability of the protection device 100 provides significant advantage over the above-described devices. The protection device 100 may be used with either an open or closed hand, the protection device 100 cannot be dropped, and the protection device 100 may not be taken from the user without great effort. This device is non-lethal in nature, simple to use, and suitable for almost everyone.

Groups of People and/or Businesses That Would Use the Invention: Men, women, teenagers, children, law enforcement, corrections, military and private security firms.

Benefits to Users of Invention: The protection device 100 assists the wearer in defending against physical attacks. The protection device 100 may be used with either an open or closed hand, cannot be dropped, and

cannot be taken from the user without great effort. Worn around the wrist, the protection device 100 is readily available when needed.

Figure 1 illustrates a front perspective view of the wrist and hand of the user and illustrates the hand band 18 which may be positioned over the wristband 16 and illustrates the nerve point tool 8 of the hand band 18. The hand band 18 and the wristband 16 are shown in the first state which may be an unarmed state. This allows the user to have use of his/her hand while keeping the protection device 100 available for use.

Figure 2 illustrates a back perspective view of the wristband 16 which may be positioned under the hand band 18 which may include the nerve point tool 8.

Figure 2 illustrates the upward extending tab 25 which may be positioned on the edge of the hand band 18 to assist the user in extending the hand band 18 over the hand of the user.

Figure 3 illustrates an open hand of the user and illustrates a perspective view of the protection device 100 which may illustrate a palm band portion 19 of the hand band 18 which may include the nerve point tool 8 and which may illustrate an interior band portion 17 of the wristband 16. The palm band portion 19 may be connected to the interior band portion 17 by a fastener 14 which may be a button, a bolt, a sewn portion or other types of attachments and may extend across the palm of the user and between the

thumb and first finger of the user. The palm band portion 19 may be connected to the back hand band portion 20 which may extend across the back of the hand of the user and may connect to the wristband 16 by the fastener 14.

The wristband 16 may include an interior band portion 17 which may extend across the interior wrist of the user and may include an exterior band portion 21 which may be connected to the interior band portion 17 which may extend across the exterior wrist of the user. The interior band portion 17 may include nerve point tool 8.

Figure 4 illustrates a closed hand of the user and illustrates a perspective view of the protection device 100 which may illustrate a palm band portion 19 of the hand band 18 which may include the nerve point tool 8 and which may illustrate an interior band portion 17 of the wristband 16. The palm band portion 19 may be connected to the interior band portion 17 by a fastener 14 which may be a button, a bolt, a sewn portion or other types of attachments and may extend across the palm of the user and between the thumb and first finger of the user. The palm band portion 19 may be connected to the back hand band portion 20 which may extend across the back of the hand of the user and may connect to the wristband 16 by the fastener 14.

The wristband 16 may include an interior band portion 17 which may

extend across the interior wrist of the user and may include an exterior band portion 21 which may be connected to the interior band portion 17 which may extend across the exterior wrist of the user. The interior band portion 17 may include nerve point tool 8.

Figure 5 illustrates a back perspective view of a closed hand and illustrates a perspective view of the protection device 100 which may illustrate a palm band portion 19 of the hand band 18 which may include the nerve point tool 8 and which may include an interior band portion 17 of the wristband 16. The palm band portion 19 may be connected to the interior band portion 17 by a fastener 14 which may be a button, a bolt, a sewn portion or other types of attachments and may extend across the palm of the user and between the thumb and first finger of the user. The palm band portion 19 may be connected to the back hand band portion 20 which may extend across the back of the hand of the user and may connect to the wristband 16 by the fastener 14.

Figure 5 illustrates the upward extending tab 25 which may be positioned on the edge of the hand band 18 to assist the user in extending the hand band 18 over the hand of the user.

The wristband 16 may include an interior band portion 17 which may extend across the interior wrist of the user and may include an exterior band portion 21 which may be connected to the interior band portion 17 which

may extend across the exterior wrist of the user. The interior band portion 17 may include nerve point tool 8.

The protection device 100 may be placed in a second state when the band is armed.

Figure 6 illustrates a side perspective view of an open hand and figure 6 illustrates a perspective view of the protection device 100 which may include a palm band portion 19 of the hand band 18 which may include the nerve point tool 8 and which may illustrate an interior band portion 17 of the wristband 16. The palm band portion 19 may be connected to the interior band portion 17 by a fastener 14 which may be a button, a bolt, a sewn portion or other types of attachments and may extend across the palm of the user and between the thumb and first finger of the user. The palm band portion 19 may be connected to the back hand band portion 20 which may extend across the back of the hand of the user and may connect to the wristband 16 by the fastener 14.

The wristband 16 may include an interior band portion 17 which may extend across the interior wrist of the user and may include an exterior band portion 21 which may be connected to the interior band portion 17 which may extend across the exterior wrist of the user. The interior band portion 17 may include nerve point tool 8.

The band of the present invention is armed.

The protection device 100 may include only two or multiple durable elastic bands 16, 18 where one band lays over the other band or may lay adjacent to the other band. The two bands 16, 18 may be secured together by a plastic or metal fastener 14 at one point. The outer band may have a nerve point tool 8 which may include plastic parts on the side facing the back of the hand and the side facing the palm of the hand.

Relationship between the Parts of the Invention: The top (outer) band may be slightly larger in diameter than the bottom (inner) band and the larger band may lie over the smaller band. The two bands 16, 18 may be secured together by a plastic or metal fastener 14 at one point. The outer band has plastic parts on the side facing the back of the hand and the side facing the palm of the hand.

Description of How the Invention Operates/Functions: The top (outer) band may be slightly larger in diameter than the bottom (inner) band and the larger band may lie over the smaller band. The two bands 16, 18 may be secured together by a plastic or metal fastener at one point. The outer band may include a nerve point tool 8 which may be plastic parts on the side facing the back of the hand and the side facing the palm of the hand. When the two bands 16, 18 are worn around the wrist while overlapping one another, the band is considered to be in the “unarmed position”. When desired, the bands 16, 18 can be positioned in the “armed position” by

simply pulling the top band over the thumb and letting it rest between the thumb and index finger. In the “armed position” the plastic parts are resting in the palm area of the hand and across the back part of the hand. These plastic parts are now positioned to strike, press, or rub against any exposed portion of the aggressor’s body. These plastic parts can be directly applied to pressure points as well or they can be used to assist in escorting an individual through pain compliance and/or widely known pressure point methods.

Features of Invention: The protection device 100 of the present invention may be readily available at all times since it is worn around the wrist in an “unarmed state”. When needed, the protection device 100 may be simply and quickly be moved to an “armed state” by pulling the top band over the thumb and allowing it to rest between the thumb and index finger. This allows it to be used with either an open or closed hand, the protection device 100 may be difficult to drop, and the protection device 100 may not be taken from the user without great effort. In addition, because the plastic parts are near the palm of the hand, great force and pressure and can be applied to the aggressor when pressing, rubbing, or striking an exposed part of the attacker’s body. It is non-lethal in nature, simple to use, and is suitable for almost everyone. The nerve point tool 8 may include plastic parts which may cause an immediate/response reaction from the aggressor

when applied to his or her pressure points. Escorting an individual can be accomplished by simply squeezing the palm of the hand that is wearing the band around the aggressor's wrist or forearm.

Two strong elastic bands 16, 18 may be made from silicone or another suitable material. The top (outer) band may be slightly larger than the bottom (inner) band. The two bands 16, 18 may be secured together at one point by a fastener 14 (in close proximity with the wrist bone when worn) which may be a clasp or rivet or other suitable device. On the front and back sides of the top band there are hard plastic parts with abrasive/sharp edges that are securely fastened to the band.

Alternative Embodiments

Alternative Embodiments of Invention: The protective device 100 of the present invention may be made of different materials for aesthetic purposes. The plastic parts could be made of metal to increase effectiveness. Custom logos or names could be placed on the exterior of the bands to identify or associate with police departments, corporations, or other groups.

The protection device 100 may be worn as a discrete wristband which may be transformed into a highly effective protection device in the blink of an eye. If the user is threatened, the user may extend the band 18 over the thumb to be transformed into an armed position as the outer band is positioned across

the palm of the hand which may be embedded with the nerve point tool 8 which may act as laden stingers. When the nerve point tool 8 comes in contact with the attacker's exposed skin they may cause an intermediate and involuntary pulling away response. This may create the sensation of being stung multiple times.

The present invention exploits the involuntary actions of the attacker's central nervous system which may be called the reflex arcs. To avoid injury in threatening situations, the reflex arcs provide the means for immediate and rapid withdrawal from dangerous or painful stimuli without first obtaining permission from the brain. Examples of reflex arcs include touching hot surfaces, stepping on a sharp object, or being stung by an insect.

The present invention takes advantage of the attacker's innate safety mechanism by causing the attacker to involuntary pull away.

The present invention may be worn around the wrist as an inconspicuous bracelet. The present invention may be positioned into an armed state in less than one second.

The sharp points of the nerve point tool 8 on the band 16, 18 may physically mark the aggressor, making it easier to identify him or her to police.

The aggressor's DNA/skin will be left on the points of the nerve point tool 8, assisting with filing charges/prosecution.

While the invention is susceptible to various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawings and are herein described in detail. It should be understood, however, that the description herein of specific embodiments is not intended to limit the invention to the particular forms disclosed.

Claims

1) A protective device to be worn around the wrist of the user, comprising:

a wristband to be positioned around the wrist of the user;

a hand band to be positioned around the wrist of the user in a first state and to be positioned around the hand of the user and a second state.

2) A protective device to be worn around the wrist of the user as in claim 1, wherein the wristband includes a nerve point tool to scratch an assailant.

3) A protective device to be worn around the wrist of the user as in claim 1, wherein the hand band includes a nerve point tool to scratch an assailant.

4) A protective device to be worn around the wrist of the user as in claim 1, wherein the wristband is connected to the hand band with a fastener.

5) A protective device to be worn around the wrist of the user as in claim 1, wherein the wristband includes an interior band portion having a nerve point tool.

6) A protective device to be worn around the wrist of the user as in claim 1, wherein the hand band includes a palm band portion having a nerve point tool.

7) A protective device to be worn around the wrist of the user as in

claim 1, wherein the hand band includes a back hand band portion having a nerve point tool.

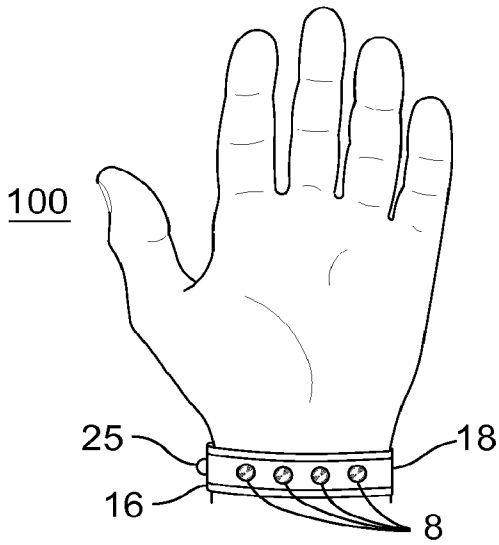


Figure 1

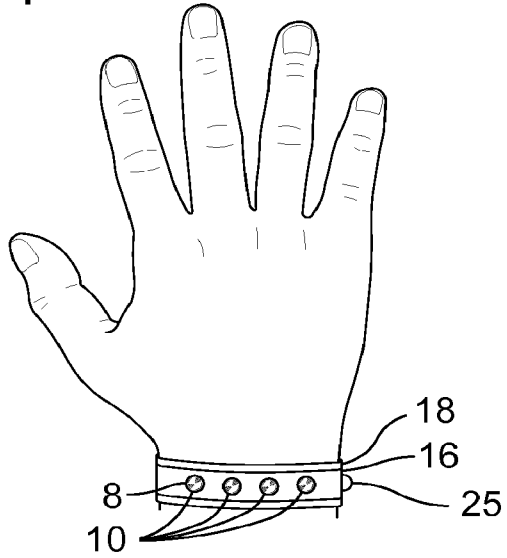


Figure 2

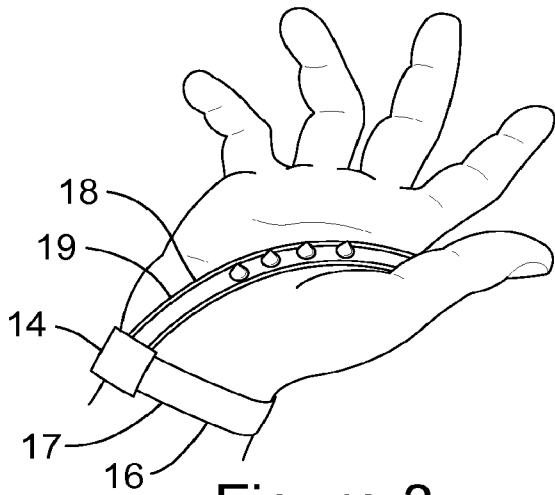


Figure 3

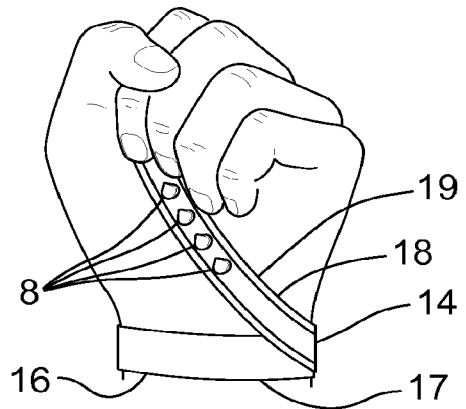


Figure 4

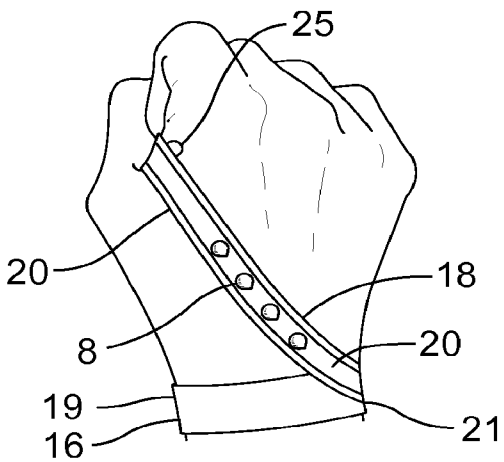


Figure 5

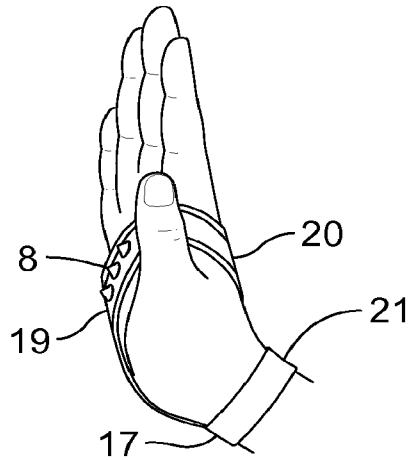


Figure 6

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 12/65037

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(8) - F41H 13/00; F41B 15/00 (2012.01)
 USPC - 2/170; 463/47.2
 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)
 USPC: 2/170; 463/47.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 USPC: 2/16, 162, 170; 463/47.2, 47.5 (keyword limited; terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 PatBase; Google
 Search Terms Used: defend-, defens*, protect*, band, strap, wrap*, arm, wrist, hand, palm, scratch-, puncture-, pierce-, slice-, cut-, gouge-, stud-, armband, wristband, bracelet, studded, spike, spiked

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,632,105 A (Barlow) 30 December 1986 (30.12.1986) fig. 9-10, Abstract, col 2, ln 42-55 and col 4, ln 45-65	1
X	US 1,583,754 A (Rogers) 04 May 1926 (04.05.1926) fig 1-2 and 5, page 1, ln 41-53, 60-69, 75-79, 100-110, page 2, ln 1-3	1, 3-4, 6-7
Y	US 3,373,445 A (O'NEILL) 19 March 1968 (19.03.1968) fig 1, col 1, ln 25-28	2, 5
Y	JP2007/218571 (HIRAI) 30 August 2007 (30.08.2007) entire document, especially abstract, fig 1, 2	2, 5
A	US 2003/0172436 A1 (Thompson) 18 September 2003 (18.09.2003), entire reference	1-7
A	WO2011/030182 A1 (NORMAN) 17 March 2011 (17.03.2011) fig 1, 5	1-7
A	US 5,538,164 A (Rivas) 23 July 1996 (23.07.1996), entire reference	1-7
A	US 2008/0146981 A1 (GREENWALD et al) 19 June 2008 (19.06.2008) fig 1, 2, 3	1-7

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"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)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p>	<p>"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</p> <p>"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</p> <p>"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</p> <p>"&" document member of the same patent family</p>
---	---

Date of the actual completion of the international search 06 January 2013 (06.01.2012)	Date of mailing of the international search report 05 FEB 2013
---	--

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
---	--